THE BUILDER

A Journal for the Architect & Constructor

JUNE 1, 1928 — No. 4452

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86TH YEAR

Transport House, Smith Square, Westminster.

DECORATIVE PANELS IN PUBLIC HALL, SYMBOLISING "TRANSPORT THROUGH THE AGES." BY MR. C. REBEL STANTON.

MESSRS. CULPIN & BOWERS, Architects.

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXXIV. No. 4452. JUNE 1, 1928.

ARCHITECTURAL DRAUGHTSMANSHIP

FROM certain of our recent comments on the Royal Academy Exhibition, reflecting as they do many criticisms of visitors to the Exhibition, our readers will doubtless have gathered that we are not quite happy in our minds as to the general trend in the style of modern architectural drawing, particularly as related to the rendering of perspectives. The disturbance which we and others feel in this matter is not by any means confined to this exhibition, and we are anxious not to leave the impression that this is the case, for there we find merely the characteristic type of modern architectural drawing, and we have no reason to suppose that this exhibition in any way encourages the tendencies we mistrust, or professes more than to select the best from available material.

It would seem almost a platitude to say that the main purpose of an architectural drawing is to state facts; yet the visible evidence suggests that draughtsmen are losing sight of the fact that theirs is a craft and not an art in itself; that draughtsmanship is a necessary means to an end—a step towards the creation of fine building. They do not appear to appreciate that the first essentials of an architectural drawing are that it should be accurate and descriptive, out of which all other attributes will derive. Such a drawing must not be permitted to deceive either by the unnatural aspect of orthographical projection, or by a deliberate distortion of fact, and it follows that in certain cases a fully descriptive sequence of drawings cannot be complete without some study in perspective. Domes, towers, cupolas, and all cases of widely varying planes, are difficult to visualise truly from a plane elevation, which may actually deceive; and a perspective drawing can do much to test the massing of a composition, and the values of detail and proportion.

There is yet another very legitimate use to which the exercise of perspective may be put. A client is naturally anxious to know what is to be the actual form of the building he has projected, and may be quite devoid of the imagination necessary to translate in his mind's eye the somewhat technical presentation of plan and elevation. It is then that a perspective sketch may do much to make good his mental deficiencies.

These are perfectly right and legitimate services which the architectural draughtsman may render in the cause of fine building. It is quite another matter for him to seek out a pictorial composition of a building and idealise it in atmosphere and colour, much as a landscape painter will concentrate upon a view that has inspired him. If the building becomes just an excuse for a picture, it is clearly unrelated to the craft of draughtsmanship. The drawing becomes at once creative in essence; the usurper of the architect's perquisite, so far as that building is concerned.

It seems obvious that the tendency to-day is to make the architectural drawing itself a work of art, rather than an exercise in skilled craftsmanship. If a perspective is to serve its real purpose, it must fulfil these conditions. It must be accurately set up from a viewpoint that can be assumed in fact; its detail must be faithfully rendered in the "weight" in which it will impress itself upon the observer; it may be, and probably is, all the more useful for an indication of the natural colours of the materials of which it is to be constructed, for colour has its effect on form; and without some suggestion of the life and movement with which it will be surrounded a sense of scale and reality may be lost. But it is surely neither legitimate nor profitable to surround the building with a welter of bright colours that are the direct antithesis of fact, and equally deceiving to portray the building in a fleeting glow of sunset light and colour, or some chance trick of atmosphere that can only occur in fact at long intervals in a normally drab existence. We remember, many years ago, a prize drawing being actually portrayed under a white panoply of snow! What possible service to architecture can such tricks of the brush render?

Our tour of the Architectural Room at the Academy suggested to us that these facts were being ignored, and that the average draughtsman is shirking the painstaking element of his craft for the glamour of a sister art. A peep into the daily life of the schools does not reassure upon the point, and even the more mature work that finds its way into this office for publication often bears the same characteristic of the modern tendency.

A chorus of draughtsmen may dub us "killjoy," and we might, indeed, be so if there were not ample scope for joy in the faithful exercise of any craft. What many of us are alarmed at is the unmistakable sign that our young men, in particular, following a good many who are now more middle-aged than young, are scorning the means in impatience for a "showy" end—that every day spent upon a drawing is grudged as postponing the fun of colouring day. That this slurring of study has had its effect upon the actual design of buildings is apparent to most of us, and architecture is just the one art that will not stand sketchiness.

An enriched cornice is carved in careful repetition to produce an effect of richness and rhythm; to the slightly observant it reads just as a chain of light and shade; but it is not for the draughtsman to shirk the facts by presenting it as an impression of the unobservant. Whatever selectiveness of vision is exercised must be left to the observer, and of these many will see and appreciate the whole story.

A column is a subtle study in line, outline and gradation of light and shade. Some it merely impresses as a series of streaks of verticality; to others it means all that it is. How many times do we see a column faithfully presented in a modern perspective? Yet it is the draughtsman's job to show the facts and leave the observer to take away with him just so much or so little as he can absorb, not to impose on him an impression that may not fulfil his ability to absorb.

Wearisome work, it will be said. Yes, perhaps, to those who do not place a value on achievement in direct proportion to the effort it has called forth, but certainly less laborious than the work of the carver who has had to repeat, chip by chip, all those modillions, and dentils, and egg and dart enrichment; and draughtsmen are no more important in the creative sense than any other group of craftsmen on the works. Their drawings are of no more value than the measure by which they facilitate or hinder the production of a fine building; they may be, indeed they certainly will be, if the process is faithfully fulfilled, in themselves objects of considerable intrinsic beauty, but such value as they acquire by this means is entirely secondary and accidental—much on a par with the enhanced value of a pair of old fire dogs, made beautifully, but for a homely purpose with no ulterior motive of gain.

There is no doubt that the appearance of a modern exhibition of architectural drawings is much gayer and more decorative than a similar one of past generations. But can we learn much architecturally by examining them in detail? Have we not seen all there is to see in this sense from the relaxed (if uncomfortable) station of the centre seat of the Academy Exhibition? If this is, indeed, a fact, there must be something radically wrong with modern architectural drawing. Perhaps the schools are aware of it, and they may already be taking stock.

NOTES

The Institute Dinner.

THE comments by a correspondent on the Institute dinner that the present object of the dinner is to advertise the Institute and help to enlarge its influence is probably true enough, and there may be good reason for such an objective, but we agree with our correspondent that the dinner function would answer a very desirable purpose should it be made the means of developing mutual knowledge and friendliness amongst the members. He asks if this is helped by these more formal affairs. All present, however, would admit that this last dinner was a great success, and that the Institute was fortunate in the setting provided by the Lincolns' Inn Hall. The speeches were unusually interesting, especially those by the Archbishop of York and Sir Berkeley Moynihan. The President, too, made an impressive speech.

Value of Technical Advice.

IT is a pleasure to be able to help others in their search for knowledge, but it is open to question how far seekers after information should go in their search for it and seek friendly aid from others. We are asked many questions on technical matters from time to time, and whilst we could supply the answers, we cannot help thinking much of the information should be sought from technical experts such as architects, builders, surveyors or lawyers. We imagine most of these questions are asked by those who would find it difficult to pay fees for expert opinion; but we have often pointed out that the desire to evade payment for expert knowledge often defeats its own object. In the case of small houses we are quite sure that the services of an architect, if the right one be employed, are far more likely to lead to economy and satisfaction in the end than a search for the cheapest estimate, often without any exact knowledge of what it provides for. We have just now been asked for information, first, as to the construction of a septic tank, secondly as to the underpinning of a bungalow the foundations of which have sagged on the Essex clay and distorted door and window frames. Our correspondents here seek some definite technical advice, and they should have no difficulty in obtaining it for a small consideration.

Architects' Fees.

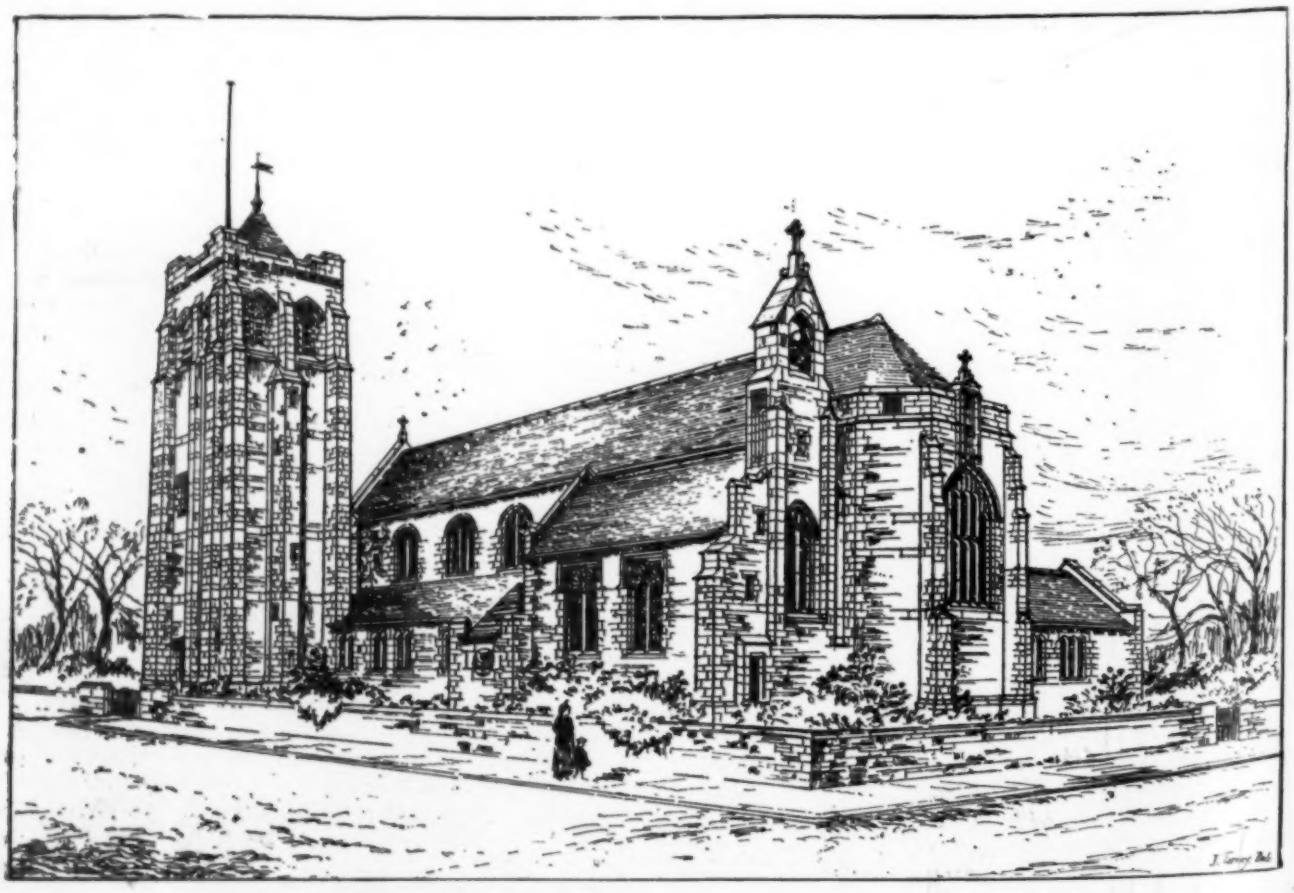
A CORRESPONDENT writes :—"Mr. Francis Hooper's question about architects' charges at the discussion on the R.I.B.A.'s Annual Report last month has hardly received the attention which it deserves. He asked if it was wise to continue for another generation the basis of percentage of cost for fees? 'Can the average employer,' he said, 'be persuaded that the architect is trying to keep down costs if fees are dependent on the outlay?' and he added the suggestion that the man who can get his scheme through most economically is the man who deserves to be paid on the highest scale. It would be difficult, no doubt, to devise an equitable system of charges which would be free from the objection pointed out, but any attempt to strengthen public confidence in the architectural profession would be worth making."

Sunlight and Health.

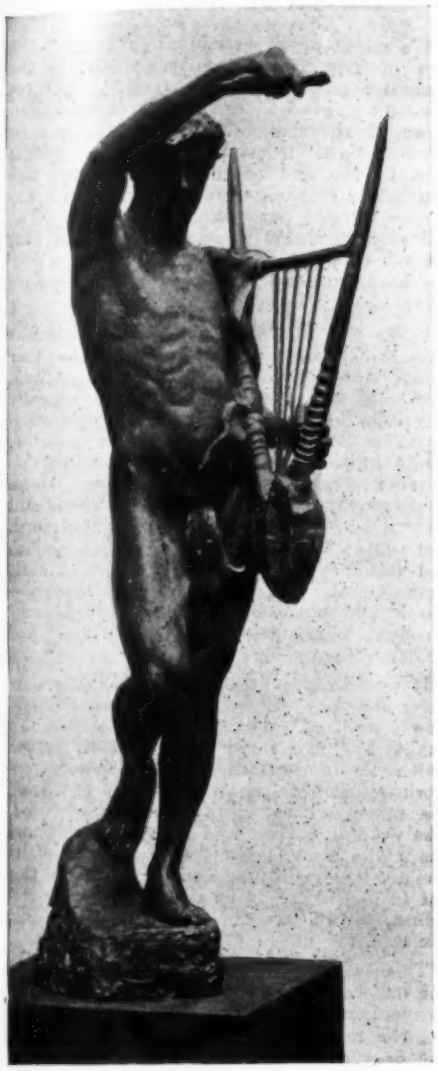
The Times Supplement dealing with the health value of sunlight touches architecture at many points and will, it is to be hoped, stimulate architects into giving the provision of light the same prominence in the future as has been given to drains in the past. It is, perhaps, strange that more stress was not laid upon smoke abatement, but this menace to health may now be sufficiently recognised; at any rate our economic plight has forced us into gigantic efforts to revive the coal industry by using our coal economically, by extracting the oil and other by-products and, through low temperature carbonisation, to produce a cheap, smokeless fuel. Coal, properly used, means, *ipso facto*, the disappearance of smoke. Another of our main requirements of the future is a cheap glass transparent to ultra-violet rays, so that every dwelling-house, cattle shed and greenhouse may be fitted with it, and so give the best chance to man, beast and plant.

British Sunlight.

IT appears to have been definitely ascertained that the beneficial effect of Vitamin D, the product of sunlight, is neutralised by an excess of sun, and this may explain the apparent anomaly that the open-air Scotsman has, on the whole, a finer physique than, say, the Sicilian. If sunlight were of value in direct ratio to



Proposed Church of St. Stephen, Wigan. MESSRS. AUSTIN AND PALEY, Architects.



R.A. Exhibition, 1928.
"Melody": Bronze.
Mr. Kellock Brown, Sculptor.

its intensity and duration we should expect the opposite. Perhaps the energising qualities of our latitudes are due to the proportion of sunlight being well balanced—neither too much nor too little. If this be so, it is all the more important for us to make the fullest use of it and to reproduce the conditions of outdoor life as far as possible indoors. The modern tendency to light banks and large offices by central lighting high up in the roof must be entirely unsuitable for these islands. Those who are boxed in under the evenly diffused daylight of a glass dome suffer from a sense of imprisonment and are deprived of sunlight during office hours, and this is not conducive to the fullest development of health and efficiency.

Colour. In close alliance with sunshine comes the question of colour, and public interest in colour and the theory of its application has assumed the dimensions of a mass movement. Makers of roofing materials and stains that until recently were of a fixed red and brown are now producing a variety of colours which, judiciously used, should be of the greatest value in decoration. The trouble with artificial roofing materials and tinted concrete has too often been that a facile use of iron oxide has produced a red vaguely resembling red tiles but with none of their variety or beauty. This difficulty seems to be surmountable by leaning more towards a warm brown or a good green or blue and making no attempt to copy the colour of "red" tiles in other materials.

The Incorporated Church Building Society. The marvellous result of the house-building campaign in this country is probably without parallel, for it is stated that the number of houses built since the war up to September 30, 1927, is 1,028,584. One can, therefore, see how seriously this is regarded by the Incorporated Church Building Society, because the chances of bringing the accommodation in churches up to a reasonable provision for all the extra housing do not seem very promising. The Society's income, judging from the 110th Annual Report, just issued, appears to be maintained, but it should obtain much additional support. As instances of admirable new church buildings given in the Report, we reproduce illustrations of two churches by Messrs. Austin & Paley, of Lancaster. Those who have at heart the conservative reparation of our ancient churches will be interested in the evidence which is provided in the Report of the Society's work in this respect and the need for greater recognition of its activities in this direction. Thus, last year, it assisted in the extensive repair of the old churches at Barking (Suffolk), Beaumaris, Hadleigh, and Monks Risborough. Numerous illustrations are given of these and other fine old churches assisted, together with some interesting notes. An article on "The Care and Preservation of Ancient Churches" by W. D. C., may well be studied by all who are responsible for the care of our historic buildings. Every one of the 72 schemes assisted last year was approved by the Society's Committee of Honorary Consulting Architects, and subscribers of the Society have, therefore, a guarantee that the money entrusted to it has been very well spent. Copies of the Report may be obtained on application to the Secretary of the Society, Mr. Clifton Kelway, 7, Queen Anne's Gate, S.W.1.

The Anatomy of St. Paul's. A correspondent in the *Times* of Wednesday gives some account of what it describes as probably the most remarkable drawing of St. Paul's which has ever been made. The drawing hangs on one of the bare masonry walls of the Trophy Room—itself some 50 odd feet above the floor of the church—and cost well over £700 to prepare. The drawing, which is 12½ ft. in height by about 9 ft. in width, is the work of Mr. R. B. Brook-Greaves, who received valuable assistance from Mr. W. Godfrey Allen. The object of this undertaking was to place on record the methods of construction employed by Sir Christopher Wren in achieving that æsthetic and static balance of parts of the building which still amazes the modern architect and the intelligent layman alike.

The Support of the Dome. The writer continues: "Within the borders of this drawing the entire anatomy of the Cathedral has been revealed, from the N.W. tower to the S.E. corner of the segmental apse—even including such details as the famous choir stalls of Grinling Gibbons. Wren's imaginative device for transmitting the enormous weight of his dome to the great arches below by means of concealed counterforts and inverted arches is also elucidated. Nor is Mr. Brook-Greaves content to conclude his analysis at the level of the floor. He breaks through it into the crypt beneath and draws with scrupulous care Nelson's tomb. Thence he proceeds to expose to our view the very foundations, until he arrives at the bed of London clay on which they rest. In all, a total height of some 400 ft. is depicted. Although each linear foot is indicated in the drawing by only one quarter of an inch—or one-forty-eighth of its actual length—the ornamental detail is everywhere executed with the most dexterous fidelity."

From the Annual Report of the Incorporated Church Building Society.
Christ Church, Wesham, Lancs.
(Messrs. Austin & Paley, Architects.

GENERAL NEWS

Mr. Leonard V. Hunt's Estate.

Mr. Leonard Vincent Hunt, F.R.I.B.A., of King William Street, Charing Cross, W.C., left £18,535.

R.I.B.A. Statutory Examinations.

The R.I.B.A. Statutory Examinations for the Office of District Surveyor under the London Building Acts, or Building Surveyor under Local Authorities, will be held at the R.I.B.A., London, on October 17, 18, and 19, 1928. The closing date for receiving applications for admission to the examinations, accompanied by the fee of £3 3s., is October 1, 1928. Full particulars of the examinations and application forms can be obtained from the secretary of the R.I.B.A.

Memorial to Nungesser and Coli.

A monument dedicated to the memory of Nungesser and Coli, the French airmen who disappeared during an attempt in May last year to make a non-stop flight across the Atlantic from Paris to New York, and to the honour of Colonel Charles Lindbergh, the first airman to make the non-stop flight between New York and Paris, was unveiled at Le Bourget. Mr. Myron T. Herrick, the United States Ambassador, performed the ceremony. The monument is the gift of Mr. Robert Jackson, and consists of an allegorical figure, "The Conquest of the Air," on a granite pedestal. The statue—a marble figure of a woman with outstretched arms—is the work of M. Gustave Michel, and was shown at the Salon of 1913.

Gertrude Bell Memorial.

The Archbishop of York recently unveiled and dedicated at the church of East Rounton, about six miles from Northallerton, a stained glass window to the memory of Miss Gertrude Lothian Bell (daughter of Sir Hugh Bell and of his first wife Mary), who was born at Washington, County Durham, on July 14, 1868, and died at Baghdad on July 12, 1926. The window is the work of Mr. Douglas Strachan, of Edinburgh, and has for the basis of its designs symbols of Miss Bell's interests. Naturally her work in promoting a better understanding between this country and the Arabs is the salient feature. The two main lights have allegorical figures. The figure in the Western light is that of a woman of the West holding in one hand certain implements and extending the other hand to the figure of the woman in the Eastern light, representing the East. Other representations in these lights comprise Magdalen Tower, Oxford, the Matterhorn, and a group of camels in the desert.

The Institution of Structural Engineers.

The Western Counties Branch of the Institution of Structural Engineers offer two prizes of £3 3s., and £2 2s., respectively, presented by the President, Mr. A. J. Taylor, for an original paper on one of a number of given subjects, or on any other subject dealing with the reinforced concrete work or steelwork. This competition is open to students of the Institution, and to students attending evening classes at any technical college or school in the area included in the Western Branch. Details may be obtained from the Joint Branch Secretary, Mr. L. H. Moore, M.I.Struct.E., 6, Berkshire-road, Bishopston, Bristol. The closing date of the competition is August 1.

Surveyors' Institution: Diamond Jubilee Celebration.

The Diamond Jubilee Celebration of the Surveyors' Institution will be held from headquarters, 12, Great George-street, S.W.1, from June 12 to 15, under the presidency of Mr. C. B. Fisher. The programme for the celebration is as follows:—

June 12.—Chartered Surveyors' Golfing Society Spring Meeting—Northwood Golf Club.

June 13.—Garden Party at Hampton Court Palace—3.30 to 7 p.m.

June 14.—Reception of members by the President in the Lecture Hall of the Institution—10.30 a.m.; Paper by the Secretary, Mr. A. Goddard, on "Sixty Years of the Institution"—11 a.m.; Choice of five visits in the afternoon; Diamond Jubilee Dinner (at which the Duke of York will be present)—at the Guildhall at 8 p.m.

June 15.—Choice of four whole-day excursions.

Full details of the programme, with application form, may be obtained from the Secretary.

A Church Unearthed.

The Rector of Brown Candover with Chilton Candover, Hants, the Rev. E. P. Gough, has made a discovery of great interest. On a slight hill which rises opposite his rectory in Chilton Candover is the derelict graveyard in which formerly stood the church of the parish. Being assured by an octogenarian of the village that beneath the ground where the old church had stood was a smaller church or crypt, Mr. Gough and his son began to excavate, and laid bare portions of a flint wall with tiny lancet windows of worked stone. Pursuing their digging, they found at the western end a round arch doorway of worked stone, resembling Binsted. Getting to the floor at a depth of about 9 ft. from the present ground level, they were able to enter a perfectly constructed building, about 30 ft. in length by 11 ft. broad. The walls, they found, were constructed of native flint, laid in mortar, herring-bone fashion, while the barrel roof was also of flint and mortar. Stone separated the nave from the apsidal chancel. The barrel roof of this underground building supported a great part of the floor of the old parish church, which, though built on the same site, was considerably longer than the underground building.

Civil Engineers' Centenary.

The Charter Centenary Celebration and Engineering Conference of the Institution of Civil Engineers will be held in London from June 3-7, under the presidency of Mr. E. F. C. Trench, C.B.E. Arrangements for the Charter Centenary Celebrations are as follows:—

June 3.—Divine Service in Westminster Abbey will be attended by the president, council, delegates, and members, 3 p.m. *June* 4.—Address by the president and reception of delegates in the Great Hall of the Institution, 11 a.m.; the 34th James Forrest Lecture on "A Century of Inventions," by Sir James Alfred Ewing, K.G.B., F.R.S., M.Inst.C.E., 4.30 p.m. *June* 5.—Conversazione at the Institution, 8-11.30 p.m. *June* 7.—Banquet to the delegates at Connaught Rooms, W.C.2, 7.30 for 8 p.m.

The Engineering Conference programme is as follows:—

June 5.—Opening of Conference with Presidential Address, 10 a.m.; meetings of the Conference on a variety of engineering subjects, 10.30 a.m. to 1 p.m.; choice of six visits to various engineering works in the afternoon.

June 6.—Choice of five whole-day visits to various engineering works, dock systems, etc.

June 7.—Meetings of the Conference on a variety of engineering subjects, 10 a.m. to 1 p.m.; choice of visits to seven engineering and constructional works in the afternoon.

The meetings of the Conference for the discussion of engineering subjects are open to members of other engineering societies, who may obtain cards of admission from the Secretary, Great George-street, S.W.1, from whom also members may obtain full details of the programme, lectures and visits.

IRONWORK*

We might prefer to call this volume "The Age of Iron."* An encyclopædia, in the general acceptance of the term, constitutes something of an exhaustive nature—and arranged alphabetically. It is a book upon hand-wrought ironwork from the middle ages to the end of the 18th century, and includes a comprehensive array of fine examples of old European smith-craft. The 320 plates exhibit three or four times that number of notable objects, ranging from door knockers, lanterns and firedogs to palace gates and cathedral choir screens.

When we remember that the smith was ubiquitous and always busy in the four quarters of Europe in the Middle Ages, and, with due after-care, his work is practically indestructible—rust being the worst disintegrator—his handiwork, we can imagine, would in pictorial form stock a considerable library. The illustrations here given—drawn or photographed as they are from pieces still *in situ*, or resting in public collections—north and south, from Scandinavia to the Spanish and Italian peninsulars, and, east and west, from Great Britain to Austro-Hungary—should afford satisfaction to any but the very greediest student in mediæval arts and crafts.

It would serve little purpose to quote Herr Otto Hoever's introductory text at large. The following will suffice as a test of his quality:—"Compared with French Gothic smithcraft of the 13th century, German ironwork appears to be more primitive during the same and immediately following period. The work is coarser and more powerful, and the material is utilised to the limits of its technical possibilities," and he carries this out to logical conclusions in the urbanity and refinement of French smithcraft as against the rusticity of the German art.

This carries one's thoughts naturally to the musical ring of the blacksmith's hammer in mediæval Nuremberg, where, to some of us, the most fascinating monument of all is the cage of the "Beautiful Fountain," and to find and twirl the one loose ring thereon is "to have cognisance of the city." If the Nuremberg and Antwerp well-heads do not figure in the book, we are given at least two fine examples—one the well-head grille (*circa* 1650) at Grafenegg Castle, Austria, and the other (*circa* 1668) at Neisse, Silesia. These domical cages are such gossamer confections that one is lost in wonder at the artists who conceived and the smiths who hammered them from hard-hearted iron into the tenderest of lacework—cages that, in miniature, might have been built by the Chinese of the Ming period to house their singing crickets.

Smithcraft is the stepdaughter, if not the true daughter, of architecture, and in some degree a child of the graphic arts. Tracing it back through the ages, we find it more or less subservient to the contemporary architecture. In the Gothic periods the smiths' motifs were largely if not entirely influenced by the designs in contemporary illuminated MSS. As the writer says: "Mediæval illuminated MSS. were succeeded by calligraphic ornament during the late Gothic period. The richly coloured illuminations were replaced by the pen-drawing pure and simple, with all its wealth of curves and flourishes. The iron craftsmen now forged their rods in imitation of these calligraphic designs."

The Victoria and Albert Museum houses a remarkable and extensive collection of hammered ironwork, both English and Continental—one of the finest collections in Europe. Some of the pieces figure in this Encyclopædia. Otto Hoever's very illuminating text and the really fine plates and smaller "cuts" will largely help us to a true appreciation of our own national collection, and, in addition, will guide us in our searches for "old iron" on our tramps abroad.

* *An Encyclopædia of Ironwork.* 320 plates, with historical introduction, by Otto Hoever. London: Ernest Benn, Ltd. 350 pp. 4to cloth. 42s. net.

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Charing Cross Bridge: "High and Low" Again.

SIR,—From your last issue I gather there are still persons who appear to think that a road bridge can be built over the Thames at Charing Cross without also bridging over the Embankment road. Three years or so ago you were good enough to publish a diagram bird's-eye view in which I indicated most of the essential levels as obtained from Ordnance maps. At present I am away from all such references and even drawing board, but I attach another diagram section which may be interesting.

There are several facts that must be faced:—

First there is the tide. T.H.W.M. is 12 ft. 6 in. above Ordnance Datum. Authority requires top of embanking wall to be 5 ft. above T.H.W.M.—17 ft. 6 in. The Embankment roadway is at or slightly below this, and at exceptionally high tide the water is blown or flows on to the roadway. Last Christmas for example.

Secondly, there is the important traffic on the river, and this at high tide. Authority demands a minimum width of fairway and headway. The wider the bridge (that is, the longer the tunnel) the greater these become. Obviously the curve of a masonry arch will rise more above the minimum headway than the flat soffit of steel girders. Waterloo Bridge, being masonry, is, therefore, slightly higher in the centre of the stream than Blackfriars or Westminster—a point due to the construction. With steel the construction of the crown of the arch can be thinner and the steel mains get hung up between ribs. Even so they are not much below the masonry bridge. (Speaking from memory, about 8 ft. or 10 ft. at most.)

Thirdly, the Strand level. Compared with T.H.W.M. and the Embankment road, which maintain their levels, the Strand varies considerably in the vicinity of the new bridge. From Waterloo Bridge to King William-street it is fairly level: it then falls rapidly. Between King William-street and the Grand Hotel the drop is 10 ft. From Grand Hotel to King Charles I. statue is another drop of 10 ft., and from there to the Embankment is near another 10 ft.

It is from the middle of this last incline that Mr. Kemp starts his approach road. His starting point is only about five feet above the Embankment level, and the bridge has to be 25 ft. at least. How does he manage the junction with the Embankment? Does he hump up the Embankment road to meet his new incline? or does he make his Northumberland incline so steep that Embankment traffic can pass under (as at Waterloo)? If that is the case (and surely all architects must realise its necessity) then the obvious place for approach road is to join the Strand at a point between the Grand Hotel and King William-street, so making the approach level, or nearly so. A second approach from the higher level of St. Martin's-place, bridging the Strand, seems a most excellent suggestion. It is really quite distinct from the river bridge problem. No one, so far as I am aware, has suggested that the bridge over the water should be at level with the bridge over the Strand.

To sum up these remarks. A bridge approach starting from or near the Embankment level is impossible. To hump up the Embankment surface to a height of, say, fifteen feet is unthinkable. To bridge over it is the only possible way; then, to drop the approach road and rise again when it might be level is absurd.

Mr. Kemp's approach road would, I suppose, follow the line dotted on my section and cross the Embankment at a level too high for a hump and too low to be pierced.

HORACE R. APPELBEE.

Has Architecture Become Mainly Utilitarian?

SIR,—At the annual dinner of the Royal Institute of British Architects the Duke of York made a very happy speech on contrasts; but was that enough?

Some of the beautiful work of the men he mentioned—full of line, grace and embellishment—seems to-day to have given way to a type of plain, utilitarian design. We have not far to go in London to admire Hawksmoor's beautiful Spitalfields Church, George Davies' original spired Shoreditch Church, James Gibbs' St. Martin's in the Fields, and many others I could name. The work of the men of the 17th and early 18th century showed great charm and artistic ability; and sad to relate, their name is seldom inscribed thereon.

CHARLES MATTINGLY.

Facts and Fallacies of Cement.

SIR,—What exactly does your correspondent, Mr. C. A. Longley, mean in the phrase "properly cured with water," used in his letter published in your issue dated May 25?

At the "end of the curing stage" some lime has to be "taken care of," according to him Perhaps he will kindly inform us when this state of the concrete's condition arrives.

W. PARRY-JONES.

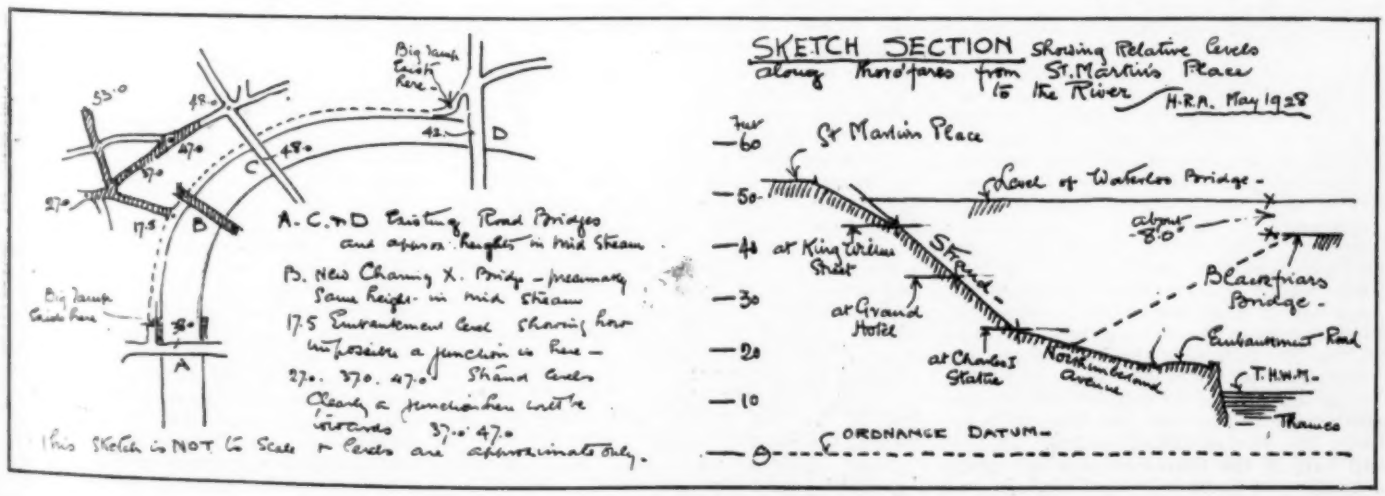
OBITUARY

Mr. R. Langton Cole.

We record with deep regret the death of Mr. Robert Langton Cole, F.R.I.B.A., architect to the Royal Albert Hall and to the National Hospital, Queen-square, and late architect to the Stock Exchange, who died at Sutton, Surrey, on Sunday, at the age of 70. The last surviving child of Mr. John Jenkins Cole, who was also architect to the Stock Exchange in his time, he was educated at the City of London School under Dr. E. A. Abbott, and was articled to his father, entering his office in 1874. He also served under the late Professor Eagles, and studied at the Architectural Association, where he won prizes. For two years he was in partnership with the late Mr. E. T. Perrott, and from 1890 to 1925 was architect to the Stock Exchange, being responsible for various alterations and additions. For the National Hospital he designed the convalescent home at East Finchley and a new operating theatre, and he also built the jubilee block, the new sanitary tower, and the nurses' home for the City of London Chest Hospital. From 1904 to 1926 he carried out various works at the Acland Home at Oxford, including the theatre, the lodge, and the remodelling of Felsted House, and he also built a residence for the Bursar of New College and other houses in the city. Mr. Cole was appointed in 1907 architect to the Royal Albert Hall, where he carried out certain alterations. His other works, in addition to factories and private houses, included the Rubber Exchange, extensions at Radley College and Dartford Hospital.

Mr. A. C. Fox-Davies.

Mr. Arthur Charles Fox-Davies, genealogist, barrister, and author, died recently at the age of 57 at his home in Warwick-gardens, W., where he had been lying ill for some weeks. He will be chiefly remembered for his work in the genealogical field. Other scholars had laboured in the same field before Fox-Davies came, but it was he who took the campaign against armorial pretence out of the austere pages of learned publications and brought it to the notice of the public at large. His labours helped to provide a field in which the talents of heraldpainters, armorial craftsmen, and designers of book-plates could be exercised, and greatly helped to forward that heraldic revival, started by others, which has borne rich fruit in the restored splendour of public ceremonies and the resuscitation of the almost forgotten celebrations of the festivals of the Orders of the Garter, the Thistle, and the Bath, and the institution of others. Besides practising his heraldry, Fox-Davies also presented it in several interesting works, among them "The Complete Guide to Heraldry" and "Heraldic Badges."


SKETCH SECTION showing Relative Levels along Thro'fares from St. Martin's Place to the River
H.R.A. May 1928
St Martin Place
Level of Waterloo Bridge
about 8.0
at King William Street
Strand
at Grand Hotel
Blackfriars Bridge
Embankment Road
at Charles I Statue
Northumberland Avenue
T.H.W.M.
Thames
ORDNANCE DATUM
A. C. & D Existing Road Bridges and approx. heights in mid Stream
B. New Charing X. Bridge - presumably same height in mid Stream
17.5 Embankment Road Charing Cross
Big Ramp Leads here
27.0 37.0 47.0 Strand Levels
Clearly a junction here could be worked to
This Sketch is NOT to Scale & Levels are approximate only.

Diagrams illustrating the Bridge Problem at Charing Cross.

THE REPAIR OF ANCIENT BUILDINGS—XXII

By A. R. POWYS, A.R.I.B.A.

THE TREATMENT OF WINDOW GLAZING

Before the nineteenth century most clear glass was crown glass. This is a kind made from molten glass spun round at high speed until it spreads by centrifugal force to a large, thin disc very slightly bellied. The centre of the disc is known as "bottle glass." But few of the "villas" of the first quarter of this century were without many sham or real pieces of bottle glass in windows and doors—in fact, so strong is the craze for a suggestion of the antique to-day that crown glass is now seldom made but to obtain these centre pieces.

In earlier buildings crown glass was cut into diamond-shaped panes and set in lead-work; later it was cut into rectangles, which as time passed tended to become larger in size, while with the coming of sash windows quite large panes were glazed with this glass.

The late Mr. Sidney Barnsley suggested that diamond panes had their origin in an attempt to use this glass with complete economy. Glass being very expensive, every bit of the disc was of value, and the waste of any was probably held to be a mark of an incompetent glazier. By cutting a disc of glass into diamonds the minimum of waste is permitted, for besides making best use of the disc itself, the corners and sides of a window-light take the smaller scraps. Even the blurred centre (the bottle glass) was not thrown away, for it was used in the windows of attics and basements and of other little used rooms. It was not until glass became relatively cheaper that people were able to afford the little waste that is occasioned by cutting the disc of crown glass into squares, and even then the resulting waste pieces were sometimes leaded in diamonds and put in the less important windows.

Owing to its very slightly bellied surface crown glass glazing when seen outside a building catches and plays with the light shining on it most beautifully. For this reason crown glass should be preserved where it is found, whether in leaded panes in mullioned windows or in the larger sash frames of the seventeenth and eighteenth centuries. In the later sash windows this glass seldom has the lovely dimmed transparency which is sometimes present in older leaded lights, but it deserves respect none the less. Again, when repair work is in hand new glass of this kind, and it may still be obtained, is much to be preferred; but as it is more expensive than ordinary commercial sheet glass the latter may sometimes be substituted for it. In any case modern clouded glass should be kept out of old buildings, particularly that kind known as "cathedral glass." The latter glass disfigures many an old church window, and where it has been inserted may be removed without scruple if clear crown glass is used in its place.

When an old window is to be glazed with leaded lights in the place of larger sheets of glass which have been substituted for the older form, it is good practice to set out the opening in rectangles and not in diamonds. New diamond panes have become so suggestive of the "mock antique" as to spoil the character of a window. When Sir Christopher Wren used leaded glass he divided the lights into rectangles.

When leaded glazing has become weak through age it may sometimes be repaired without re-leading by turning back and re-cementing the flanges of the lead calms.

The widths of the leads chosen for the repair of old glazing is a matter deserving consideration, and in this the best guide is probably the size of the old calms. In the second half of the nineteenth century very thin leads were commonly used, and in reaction to this practice architects have become accustomed to use very wide leads. Such mediæval leading as remains in coloured-glass windows is usually narrow, and has a slightly rounded surface. Leading is specially an important matter when ancient painted glass is being repaired. I would refer the reader of this article to Mr. S. L. Brown's treatise on the subject, which appeared in the April (1928) issue of the Journal of the British Society of Master Glass Painters.

During the Gothic revival an attempt was made to recapture the art of mediæval stained-glass painting. This attempt owed its origin to the recognition of the great beauty and richness of mediæval coloured glass. The glass produced under this influence is already acquiring archæological value, and may in time find for itself admirers on other grounds. The present generation of the educated middle classes, however, holds this glass unpleasant, and desires to be rid of it, and yet at the same time it continues the attempt to capture in newer glass the glory of the mediæval craft. Its success is little, if any, greater than that of the preceding generation. That this statement is true may be tested by considering the comments that are made on new coloured glass in old buildings. There are a few who praise the work of a favourite stained-glass painter, a few definitely condemn, the majority declare the result to be only less intolerable than the work of the earlier trade-controlled revival. It is nowhere received with unquestioned pleasure. In an ancient building it is probably impossible for a modern coloured window to be an improvement on old clear crown glass.

The Society for the Protection of Ancient Buildings advises that new stained glass windows should not be added to old buildings. That coloured glass was known to exist in olden times is held a poor reason for attempting again to put it in a window. The late Mr. Micklethwaite heaped sarcasm on architects and clergy who made additions or alterations only on the ground that they were "correct." And William Morris, after attempting to adorn churches with glass of his design, held that old buildings were not the place in which to make such experiments. Indeed, they are too valuable. It seems only when the desire for stained glass is unconnected with archæological or ecclesiological learning that it is possibly justified; and, then, it is probable that such a desire will be best satisfied by setting panels of coloured glass in the clear glazing of an old window.

In the near future it is not unlikely that many stained glass windows painted during the Gothic revival will be condemned, particularly where churches are darkened by a density of colour. That these old-fashioned windows form an interesting link in the history of glass painting has already been hinted. It is then, perhaps, the less surprising that I suggest here that when the wave of destruction breaks the central figure work, the panelled designs and inscriptions should often be preserved, set in clear crown glass.

Although this article is concerned with the repair of ancient buildings, it seems, lest I should be supposed to condemn all glass painting, that the position must be further elaborated. Professor W. R. Lethaby has advised architects, craftsmen and artists not to fear a spirit of adventure and invention in their work. And the use of new stained glass in modern buildings is as likely to be desirable as the development of any other art. To warn the public to shun such adventure in an old building in no way means that elsewhere it should not be encouraged.

Every scrap of old coloured glass should be most carefully preserved, and this seldom in any other place than the window where it is found. Before repair is begun large scale photographs and coloured drawings should be made of it, not only as permanent records, but also to ensure that when releading is done the old arrangement can be retained. It is not uncommon to find that the glass of an old window has been rearranged, if not mixed, with glass taken from elsewhere. In such cases some may feel a conflict of desires, either to see the old glass of different designs separated and as far as may be releaded in its original relationship, or, alternatively, to preserve the accidental beauty derived from a confused display. And the latter desire will be reinforced by the knowledge that an attempt to re-establish order will bring with it problems much more difficult to solve than straightforward repair. Such groups of old glass have been assembled by our ancestors because no scheme, no design, was complete. When such a window is taken apart for reassembly in the original order many vacancies are found, and while the archæologist and the artist wishes to have no make-believe restoration, the vacant spaces of clear glass breaking the unity of an old design may be disagreeable to the ordinary man. While no rule can or indeed should be made in an attempt to cover the requirements of every case, it appears that in this matter, as in others relating to the maintenance of ancient buildings, the benefit of any doubt should be given to preserving such glass where it is found.

The Society for the Protection of Ancient Buildings makes three recommendations in general terms on the cleaning and repair of ancient coloured glass. The first is that it should, if possible, be cleaned and repaired in position. This is more often practicable than is admitted and should be attempted or at least carefully considered before removing the glass from its position. The second relates to glass that has to be taken from a window for repair, and is that it should not leave the building or the workshops attached thereto. The third recommendation is with regard to those parts of an old window which are found to be missing; in this case the Society recommends that the completion of a window should on no account be attempted; that the missing spaces should be filled with pieces of glass, which may be toned a little so as not to confuse the relationship of the ancient work in the midst of which it is set.

In cleaning old glass preparatory to re-leading it, risk attends the use of hot or even warm water; and soda, or soap containing soda, should on no account be used. Each fragment should be cleaned separately only under the direct supervision of one who knows intimately the processes of painting and firing coloured glass.

When glass is being leaded it is the practice of some glaziers to smear the cement in a soft state all over the glazing and to work it under the leads by rubbing it in. Thereafter, when setting is begun, they remove the cement that is left on the glass face by cleaning and even by scraping the glass surface. It will be readily understood that this practice must be forbidden when valuable old glass is being treated. In these circumstances the cement should be spread only under the flanges of the calms, which are then pressed down closely, care being taken the while not to let the cement get on to the glass elsewhere.

When individual pieces of glass have become worn and frail they may be set between two clear pieces of thin, new glass. This process is known as "plating."

With the preservation of ancient coloured glass its protection must be considered. Mr. Thackeray Turner, who understands the value of ancient buildings as well as any living man, has said that no ancient glass, however beautiful, justifies the disfiguring wire or plate glass guards which are so commonly set on the outside of an ancient window. This extreme view may not accord with that of the majority of men, and will not be accepted by those who set a greater value on glass than on the general seemliness of the building that contains it; but it has sound sense as a base; and it is only

seldom that such protecting guards are in reality worth while. To protect in old windows modern glass which can be replaced at only a little cost with such guards is absurd, and is also more costly than insurance. But as no money can re-create fine mediæval glass its protection in certain positions is desirable. No really satisfactory protective screen has yet been devised. Wiring, whether of copper or iron, is ugly, plate glass is ugly and also, unless properly arranged to allow for ventilation between itself and the old glass, may become the cause of active decay in the latter. Further, unless such a protective screen is hinged or otherwise made easily movable, dirt collects on the backs of both new and old glass and cannot be cleaned off. It is possible that clear plate glass set in hinged gunmetal frames divided into small rectangular panes, such as is used in fire-resisting doors in London offices, is the least disagreeable form of protection yet suggested.

It is a remarkable thing that dirt which would never be tolerated on glazing in houses is allowed to collect and remain on the windows of churches. Indeed, windows in the latter are so invariably neglected in this respect that it might almost seem that man, when once he has dedicated his glass, expects Providence to see to the subsequent cleaning. It is as desirable that old coloured glass should be cleaned periodically as any other work of art which deserves human care and respect. But cleaning in such circumstances should only be entrusted to the control of a competent glazier accustomed to repair work and having a knowledge of the value of the glass in his care.

FRANCO-BRITISH UNION OF ARCHITECTS

BEFORE giving an account of this year's annual meeting of the Franco-British Union of Architects, it may be opportune to give a brief summary of its aims and of the way in which these are realised. The objects of the Union can be defined as an *entente cordiale* of architecture: and it may be of interest to correct an erroneous impression that membership is restricted to any particular section of the profession or limited to those who have achieved eminence as architects. Actually the statutes (Art. 3) provide that ordinary membership is open to qualified architects of the two countries if in full possession of the civil and political rights of their respective countries. A British candidate must: (*a*) be proposed and seconded by two members of the French section from personal knowledge, or (*b*), in special cases, a candidate may apply to the hon. secretary of the British committee, when his qualifications will be investigated, and, if found to be in order, the candidate will be proposed for election at the next ensuing annual meeting by the committee of the French section.

In practice it has been found to be desirable to limit membership to those who are members of the R.I.B.A. or one of its allied societies on the one hand, or of the Société des Architectes Diplômés, the Société Centrale des Architectes, or one of the provincial societies which compose the Fédération des Architectes Français on the other.

But within these quite reasonable limits no distinction is made between the youngest member of the profession and, shall we say, a Royal Gold Medallist. There is no entrance fee and no annual subscription; the small expenses incidental to the activities of the Union are met by grants from the two parent bodies—the R.I.B.A. and the Société des Architectes Diplômés, and we venture to think that the results are not the least useful of the professional activities of the Institute. The recognition of the Union by the Ministry of Fine Arts in France is sufficient proof of the importance attached to its meetings in that country.

The first three annual meetings were held in Paris and London respectively, in accordance with the original rules of the society. Later these rules were amended to make it possible to hold meetings in any part of Great Britain or France, such as Canterbury, 1926, and Winchester, 1928.

This year the programme commenced with a day in Winchester, when visits were paid to the College, under the guidance of an old scholar, Alderman J. S. Furley, and the housing scheme at Stanmore, where members were met by the architect, Mr. Curtis Green, A.R.A. (himself an "original member" of the Union), and Mr. Thomas Holt, Town Clerk. Later a visit was made to St. Cross, where members were received by the Master, who gave a brief history of the Church and of the foundation of the Hospital. Members were entertained to luncheon by the Mayor of Winchester at his official residence, "Abbey House." The party included the Mayor of Winchester and Mrs. Webb-Manley, Alderman J. S. Furley, Alderman A. Edmeades, Mr. T. Holt (Town Clerk), Mr. L. Roberts (County Architect), Mr. W. V. Anderson (City Engineer); Monsieur Legros (President) and Mme. Legros, M. Letrôsne (President S.A.D.G.) and Mlle. Letrôsne, Mr. Curtis Green, A.R.A., and Mrs. Green, Mr. and Mrs. H. V. Lanchester, M. Louvet, M. and Mme. Remanry, M. Schneider (Hon. Sec. French Section), M. and Mme. Lisch; M. and Mlle. Guiard; MM. Bérard, Expert and Maigrot, Messrs. A. N. Prentice and E. P. Warren, and Lt.-Col. H. P. Cart de Lafontaine.

During the afternoon members visited the Cathedral under the guidance of the Sub-Dean, and were later entertained to tea by Alderman and Mrs. Furley. This concluded the programme for the first day, the evening being left free for the informal discussion of architectural topics between members in accordance with the usual practice, which has shown that much of the value of these meetings lies in the opportunities which are always provided for such talks.

On Friday the morning was devoted to meetings of the Bureau and to the Annual General Meeting, at which Sir Reginald Blomfield, R.A. (Past President), Mr. E. Guy Dawber, A.R.A., Messrs. H. C. Bradshaw, E. B. Maufe, H. M. Fletcher, and Arthur Davis, Hon. Sec. British Section, joined those who had already taken part in the previous day's programme.

The usual formal business having been disposed of, the President and officers for the ensuing year were unanimously elected as under:—

President: Mr. E. Guy Dawber, A.R.A., Past President R.I.B.A., etc.

Vice-President: M. Letrôsne, President of the Société des Architectes Diplômés, etc.

Secretary-General: Lt.-Col. H. P. Cart de Lafontaine.

Hon. Treasurer: M. J. M. Poupinel.

Hon. Sec. French Committee: M. A. Schneider.

Hon. Sec. British Committee: Mr. Arthur J. Davis.

An interesting discussion took place on the subject of international architectural competitions, arising from the report presented at the last annual meeting by the Chairman (Monsieur Defasse) of the special joint committee appointed to investigate the working of the existing regulations.

This committee, composed of the following members, Messrs. S. D. Adshead, A. J. Davis, A. Defasse (chairman), G. Legros, A. Louvet, H. V. Lanchester, Sir John Simpson, MM. Schneider and Tournaire, presented two reports, (1) signed by the British members, expressed the view that the existing regulations did not require amendment, but that it was desirable that these should be respected by all competitors and that penalties should be enforced on members of any properly constituted architectural society who took part in a "banned" competition. (2) The French members, while agreeing in principle with their British colleagues, were unable to go so far as recommending disciplinary action, because the Code Guadet (which regulates professional practice in France) was silent on the subject of competitions, and, in consequence, the enforcement of penalties, such as expulsion from membership, could not be enforced. Monsieur Defasse suggested, as a first step in the direction of stricter discipline in this matter, that competitions of which the conditions did not conform to the regulations might be divided into two categories: (*a*) those which were simply "badly organised," and (*b*) those which were definitely out of order and of which the conditions were not in accordance with the regulations for international competitions in some essential points. It might (he thought) be possible to ascertain the opinion of the French members of the Union with regard to a possible addition to the Code Guadet with regard to the latter, and if this proved favourable to stricter disciplinary measures a draft clause could be submitted to the Federation of the Architectural Societies of France.

The Secretary-General, in bringing forward the matter for discussion, mentioned that it had been discussed at the last meeting of the *Comité Permanent International* during the Eleventh International Congress at The Hague and Amsterdam last year. The Permanent Committee, which had now been reconstituted on the pre-war basis, had adopted a resolution reaffirming its adherence to the regulations adopted by the International Committee at Paris in 1908, and added a recommendation that the conditions should, in future, be strictly adhered to by Juries in drafting conditions and in judging designs submitted in all international competitions. This resolution would be confirmed at the meeting of the C.P.I.A. which was to be held in Paris next month, and it might be opportune to have the views of the members on the subject.

After a discussion, in which the following members took part, Mr. Dawber (president), Sir Reginald Blomfield, R.A., Messrs. Legros, Arthur Davis, H. V. Lanchester, and Bérard, the following resolution was unanimously agreed to:—

"The Franco-British Union of Architects, at its eighth annual general meeting, having considered the resolution passed by the Eleventh International Congress of Architects on September 3, 1927, on the subject of international architectural competitions, requests the Bureau of the Union to investigate the best means of exercising control of the drafting of the programmes of international competitions, with special reference to possible co-operation between the C.P.I.A. and the administrative organisation of the League of Nations, and authorises the Secretary-General to communicate this resolution to the C.P.I.A. at its next meeting."

Mr. G. G. Wornum, F.R.I.B.A., and MM. Gromort and Ravazé were subsequently elected as ordinary members.

It was agreed that one of the following places should be selected by the Bureau for the next annual meeting:—Strasbourg, Rheims, or Caen.

During the afternoon a visit was made to Southampton Docks by special arrangement with the Southern Railway Co., who deputed Capt. Biddle, Assistant Marine Manager, and other members of the staff to act as guides, and kindly placed a steam launch at the visitors' disposal. A visit was subsequently paid to R.M.S. "Aquitania," where members were received by Mr. Cotterell, District Manager of the Cunard Co., and Mr. Davis, the architect, gave an account of the interior design and fitting out of the ship. He pointed out that one of the essential conditions was that the idea of being afloat should be eliminated, as many of their passengers were

Americans, who were not, as a rule, good sailors. Another point which had influenced the decorative treatment was the idea of giving something of the character of the best European styles, which seemed to appeal to passengers from the New World.

A cordial vote of thanks was accorded to the Cunard Steamship Co. for their kind hospitality, and to Mr. Davis for his interesting account of the architectural treatment.

On Saturday a whole-day excursion was taken through delightful scenery, via Amesbury and Stonehenge, to Salisbury, where some hours were spent in visiting the town, the Cathedral, and the Close. In the evening the Union entertained the Mayor and Mayoress of Winchester, the Mayor of Southampton, the Town Clerk of Winchester, and the County Architect and the City Engineer to dinner.

The toasts of the King and the President of the French Republic having been duly honoured, the new President, Mr. E. Guy Dawber, proposed the toast of "The Franco-British Union of Architects." Speaking in French, Mr. Dawber referred to the historical and architectural importance of the buildings that had been visited and the influence of tradition on the development of architecture, and uttered a note of warning on the wanton destruction of beautiful old buildings and the desecration of the countryside which was destroying a precious heritage of beauty both in England and in France. Continuing his remarks, Mr. Dawber referred to the Ecole des Beaux-Arts—"the oldest architectural school in the world!"—which, through pursuing traditional methods, equipped its students with such knowledge as enabled them to deal with essentially modern problems in a modern spirit. In conclusion, he extended a hearty welcome to the French members on their visit to England.

Monsieur Legros, in responding to the toast, expressed the appreciation of the French members for the way in which they had been received by their British colleagues, to the Mayor of Winchester for his kind hospitality, and Alderman Furley, the Town Clerk, Mr. Holt, the Cunard Steamship Co., the Southern Railway Co., and others who had given time and trouble to acting as guides and counsellors during their visit.

The Mayor of Winchester, the Mayor of Southampton, Monsieur Bérard (who gave a humorous impression of his experiences), and Lt.-Col. Cart de Lafontaine, also spoke and contributed to the enjoyment of a very successful final function.

On Sunday the party broke up. The French members proceeded to London by motor-coach and left in the afternoon for Paris, well pleased with their brief stay in England and promising English members of the Union a very cordial reception on their visit to France for next year's annual meeting.

MEETINGS

FRIDAY, *June* 1.

Institution of Municipal and County Engineers. Meeting of the West Midland District. At the Council House, Birmingham. 5.30 p.m.

Edinburgh Architectural Association. Annual Convention of the Incorporation of Architects in Scotland.

SATURDAY, *June* 2.

Edinburgh Architectural Association. Joint visit with the Incorporation of Architects in Scotland.

June 3-7.

Celebration of the Centenary of Incorporation by Royal Charter and Engineering Conference of the *Institution of Civil Engineers*, at Great George-street, S.W.1. (For details, see page 932.

WEDNESDAY, *June* 6.

Northern Architectural Association. Annual General Meeting. 7.30 p.m.

MODERN FLATS IN LONDON

By F. E. BENNETT, A.R.I.B.A.

VI.—Generally Considered.

FROM an examination of some of the larger buildings recently designed some general conclusions are to be arrived at.

In the arrangement of the building on the site the internal area is frequently resorted to. This is a pity. In most cases where employed no doubt the shape and situation of the site made it necessary, but that its use should have the appearance of being a fashion is unfortunate. While on a low building the internal area is tolerable, in an eight-stories building any area less than 40 ft. wide becomes little better than a ventilation shaft, and the kitchen and servants' rooms which invariably face on to it cannot be found very livable by those who have to occupy them.

The "dark" hall in the flat itself is a feature which appears frequently in the modern plan, and although it is an evil on hygienic grounds it is not such a bad thing as it might have been before the days of central heating. Such a hall can be placed opposite a living-room and obtain secondary light if connected by an arched opening without doors. The central heating warms the whole flat evenly so no draughts occur between the two compartments.

The large staircase is usually no longer necessary, vertical circulation beyond the second or third floors being almost entirely conducted by the lifts. The staircase has now become little more than a fire-escape and no longer calls for an important treatment. Lifts do not go wrong very often and they are easy to use and very quick, the effort required to take one up eight floors being scarcely greater than the effort necessary to walk to one story. The staircase might well be separated from the lift to give place to some other unit in the plan, and be reduced to minimum dimensions. Again, secondary staircases without natural lighting at all and taking the form of fire towers would not be entirely unreasonable.

The main entrances to flats in London are not, on the whole, successful. They are inclined to look uninviting, and the halls are often dark and dismal. The darkness is due to the prevalent desire to provide natural lighting for them. Halls are in consequence generally found to face on to inner courts, which, being narrow and anything up to 80 ft. tall, provide only the most meagre light. If, on the other hand, windows are dispensed with and artificial light is frankly used there is much more chance of making the hall look attractive and interesting. There is a value of æsthetic contrast in passing from the daylight of the street to the artificial light of an entrance-hall, especially if the hall lighting is treated subtly, being, say, in the cornice or on wall-brackets with the globes screened behind coloured shades. Also, instead of being sunk deep into the building with perhaps a corridor-like approach, as it often is, the hall may be more directly approached from the street outside. It can be treated with a good decorative scheme which the comparatively brighter light will reveal in its full detail. Then the lifts, being artificially lit, and in the same character as the hall, can be treated in the same scheme. If the doors of the lift carriages are glazed a greater feeling of openness is gained than if they were solid.

No doubt there is some dislike of the idea of an entrance-hall which displays itself freely to everybody passing on the pavement. While this dislike is a reasonable one from the point of view of the older generation which demands exclusiveness, undoubtedly it is not one shared by the average modern flat tenant.

Some modern plans may be criticised for giving unnecessarily good aspect to the dining-rooms and that at the expense of bedrooms, the bedrooms being really more important as regards the positions of the sun. The modern habit is to use dining-rooms for meals only, and then chiefly at night time for the evening meal, while bedrooms are often used for many hours during the day, especially by many women who will spend a long time over their toilets. There is a tendency for bedrooms to become smaller and the living-rooms to increase in size, and it is possible the future may find this interchange of size further increased.

Kitchens are still large. It seems difficult to get away from the old idea that the kitchen is a living-room for the servants. On the contrary, when adjacent rooms are provided for servants the kitchen is merely a service apartment used purely for the preparation of meals in which everything should be so carefully arranged that all waste of effort is avoided. If it is wider than necessary, a great deal of crossing and re-crossing of the room is made. The ideal is to have everything within the immediate reach of one person standing in the centre of the room. For instance, a centre table is not absolutely necessary. It may be substituted by a sliding work table drawn out from the middle of the dresser.

The wall-plug is a fixture now developed for many uses, and it is well to remember the variety of these uses. Much labour is saved by having a common rubbish chute vertically down the length of the building with an aperture at each kitchen.

A disadvantage of the small kitchen is the difficulty of using it as a place in which to wash linen. This disadvantage can be met, however, by having a specially equipped common laundry in the basement which is available for each tenant at specified times.

The financial question, though one which properly does not concern the architect on the usual job, is a matter which may concern him very directly when building a block of flats. The client may seek his advice regarding the capitalisation of a scheme and require financial studies.

The financial study should comprise the first step taken in dealing with the money required, showing how it will be spent and the probable income to be derived. To complete this study some knowledge of land and property values in the district concerned is necessary. Rough calculations, tables, and generalisations are often relied on far too much, and the tendency is to leave the economics to chance, but each case must be separately diagnosed, for the ailment of one case has no application to another. For a quick summing up, however, the following method has its value :—

$$\frac{3/- \times 16}{12/-} = \frac{48}{12} = 25\% = \text{gross return.}$$

12/- = the assumed rental value per square of floor space.
3/- = cost per cubic foot of building.
16 = average height floor to floor = cubic contents in relation to one square foot of the floor area.

One knows readily whether this gross return is enough to cover the interest on costs of property building costs, maintenance, etc. The financial study should determine the price which can be offered for the land.

In the raising of the loans much depends on the cost of obtaining them.

If the plain is "pliable" so that it may be altered for future changes, and if ample sinking fund is provided for periods of bad letting, the building should have a good chance of being a sound investment.

The future of flat building has many possibilities. That many more large blocks will be erected in the West End in the near future is doubtful. The greater quantity of work to be expected is the smaller kind of flats, many of which are already rising unostentatiously in the suburbs at the present time.

(Concluded.)

ILLUSTRATIONS

Transport House.

THIS building, which is in Smith-square, Westminster, started as quite a modest structure of four floors, on an area 75 ft. by 45 ft., but demands upon its space increased until there is about three times this superficial area, reaching to a tenth story in the rear and providing about 55,000 feet of letting space. The site is traditionally deceptive, the sinking of St. John's Church in the square being a well-known incident, and a good many difficulties were experienced before the raft was established on reinforced concrete piles. The steel-framed structure had to fit also another requirement—the artistic idiosyncrasies of the L.C.C. Committee, who, as ground landlords, demanded harmony with the domestic work of the district, and incidentally cut out what the architects consider the best architectural feature of the design. The Georgian influences were, however, very skilfully combined with neo-Georgian steel, so that the multicolour brick elevations, relieved with red rubber dressings, and set off by the white painted sash windows, accord pleasingly with Sir Edwin Lutyens's work in the opposite corner. The height of the cornice is fixed by the ground landlords, and is followed by Mr. Morley Horder on the other side of the street. The fourth floor is treated as a frieze in stucco, an innovation which gives scale and proportion and incidentally provides relief to the mass of brickwork.

There are two main entrances, both carried out in Portland stone on classic lines with Ionic columns. The Dean Bradley-street entrance, inserted out of the centre after the first portion was completed, has been given character by recessing the brickwork and carrying up a four-storied bay, an arch terminating the feature. Apart from the office space there are three meeting rooms. On the top floor is an excellently arranged board room, with a lantern light of about 30 feet square. The columns are cased in mahogany, harmonising with the specially designed inlaid tables and chairs. The walls, to dado height, are covered in smoke blue canvas, and above this they are panelled and distempered in flame effects.

A council chamber is designed for important conferences of national bodies, and it is anticipated that the important Industrial Peace Conferences will be held here. The seating is in segmental rows of fixed mahogany seats, upholstered in blue. Each seat has a writing desk and drawer. The platform chairs have been specially designed by the architects and are carved by Mr. A. T. Bradford. The platform front is very pleasing, and bears the carved monogram of the Union, surrounded by a limewood wreath. A notable feature is the treatment of the corners, which have been cut off to provide telephone boxes, etc. Ionic pilasters enclose some fine carving on the door cases, which are carried out in mahogany and limewood. The entrance is worthy of attention. The capitals of the columns and pilasters here are treated in bronze in harmony with the fine Venetian windows.

The public hall on the ground floor seats over 400 people. It is lighted by lanterns at each end, and has a barrel ceiling. From the eight octagonal columns, ornamental ribs connect up a scheme of decoration in fibrous plaster. Above the piers is a series of decorative panels which have been utilised for a group of paintings by Mr. C. Rebel Stanton, symbolical of transport through the ages. Columns and walls are covered to the height of ten feet in beige canvas, and above this flame effects are again employed. To each of the halls there is attached a properly equipped ante-room.

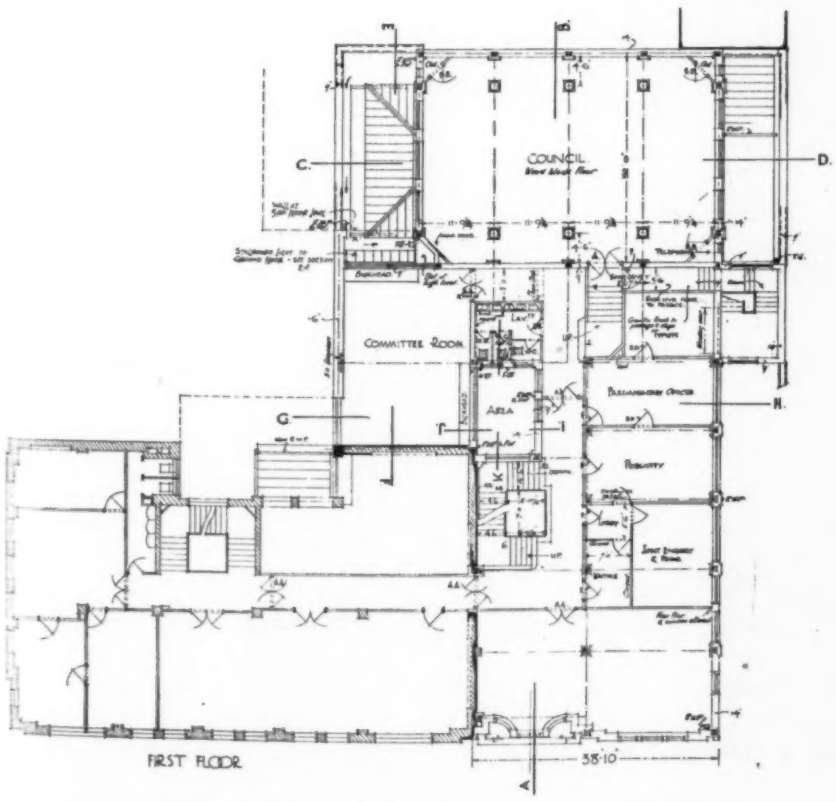
A feature of the occupancy of the building is the juxtaposition of capital and labour, capital being the tenant of labour. No fewer than three banks have premises in the building. Two of the "big five," Barclays and the Westminster, have particularly well-equipped accommodation, Messrs. Culpin and Bowers having acted as architects for both banks.

The general contractors were Messrs. F. Troy and Co., Ltd., and the following were sub-contractors:—Bostwick Gate Co., The Morris (Westminster) Metal Works, Nash and Hull, Ltd., architectural metal work; Malcolm Macleod and Co., Ltd., artificial stone staircases and granolithic work; The Excel Asphalte Co., Ltd., Salter Edwards and Co., Ltd., asphalt work; The Relay Automatic Telephone Co., Ltd., automatic telephones; J. Wright and Co., breeze fixing bricks; Brookes, Ltd., bricks (white glazed); The London Brick Co., Forders, Ltd., bricks (Fletton's); West Bros., bricks (stocks); Sussex Brick and Estate Co., Ltd, bricks (facings); Central Joinery Co. (1927), Ltd., Co-operative Wholesale Society, Ltd., Furnishing Department, F. Troy and Co., Ltd., cabinet work, furniture and special joinery, etc.; David Colville and Sons, Ltd., constructional steelwork, N Block; Power's and Deane Ransomes, Ltd., constructional steelwork, S Block; G. A. Williams and Son, curtains and blinds; C. Rebel Stanton, decorative panels; Dictograph Telephones, Ltd., Dictograph telephones; A. Sanderson and Sons, Ltd., distemper, canvas wall linings and wallpapers; Turk System Drying Co., Ltd., drying strong rooms; Electric Power Installation Co., electrical installation; General Electric Co., electrical fittings (special); Wm. F. Blay, Ltd., excavations, North Block; Lion Foundry Co., external iron staircases; Brown and Madeley, fibrous plaster work; Merryweather and Sons, Ltd., fire appliances; Fenning and Co., Ltd., granite and marble work, N Block; A. and F. Manuelle, Ltd., granite and marble work, S Block; G. N. Haden and Sons, Ltd., heating and mechanical ventilating; Yannedis and Co., ironmongery and fittings; Carron Co., kitchen installation; Marryat and Scott, Ltd., Smith, Major and Stevens, Ltd., Waygood Otis, Ltd., lifts; Haywards, Ltd., pavement lights; A. E. Frost, reinforced concrete piling foundations and strong rooms; Puttyless Glazing Co., C. E. Welstead, Ltd., roof lights and glazing; Burns Bros. (London), Ltd., sanitary engineering; King, Craig and Co., Ltd., Smithson, Coote and Co., Ltd., sanitary fittings; Nash and Hull, Ltd., signs and signwriting; Sankey-Sheldon, steel shelving; Ratner Safe Co., Ltd., strong room doors; Gent and Co., synchronised clocks; Art Pavements and Decorations, Ltd., Fenning and Co, Ltd., Terrazzo flooring and dadoes; Goodalls, Manchester, tip-up seating, transport hall; Thermal Engineering Co., Ltd., ventilating ducts; T. Buxton, wall tiling; C. E. Welstead, Ltd., windows, steel, bronze and leaded glazing; Joseph F. Ebner, Stevens and Adams, Ltd., wood block and hardwood flooring; E. J. and A. T. Bradford, wood and stone carving.

The architects are Messrs. Culpin and Bowers; the consulting engineer, Mr. John Dewar, M.I.Struct.E.; and the quantity surveyor, Mr. F. W. Charles Barker.

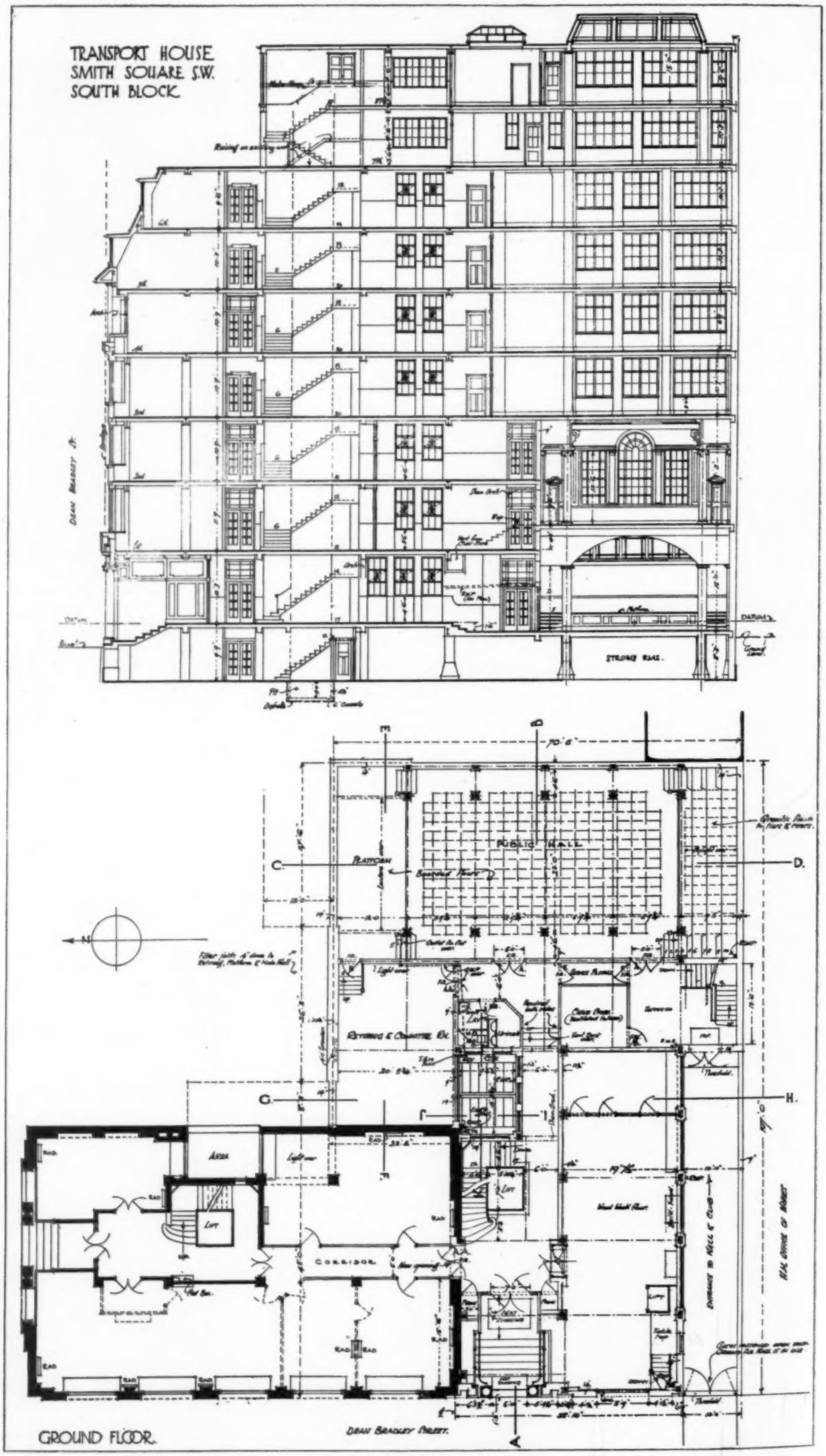
(*Continued on page* 947.)

Transport House: Chairman's Seat.



Transport House, Smith Square, Westminster.

MESSRS. CULPIN & BOWERS, Architects.

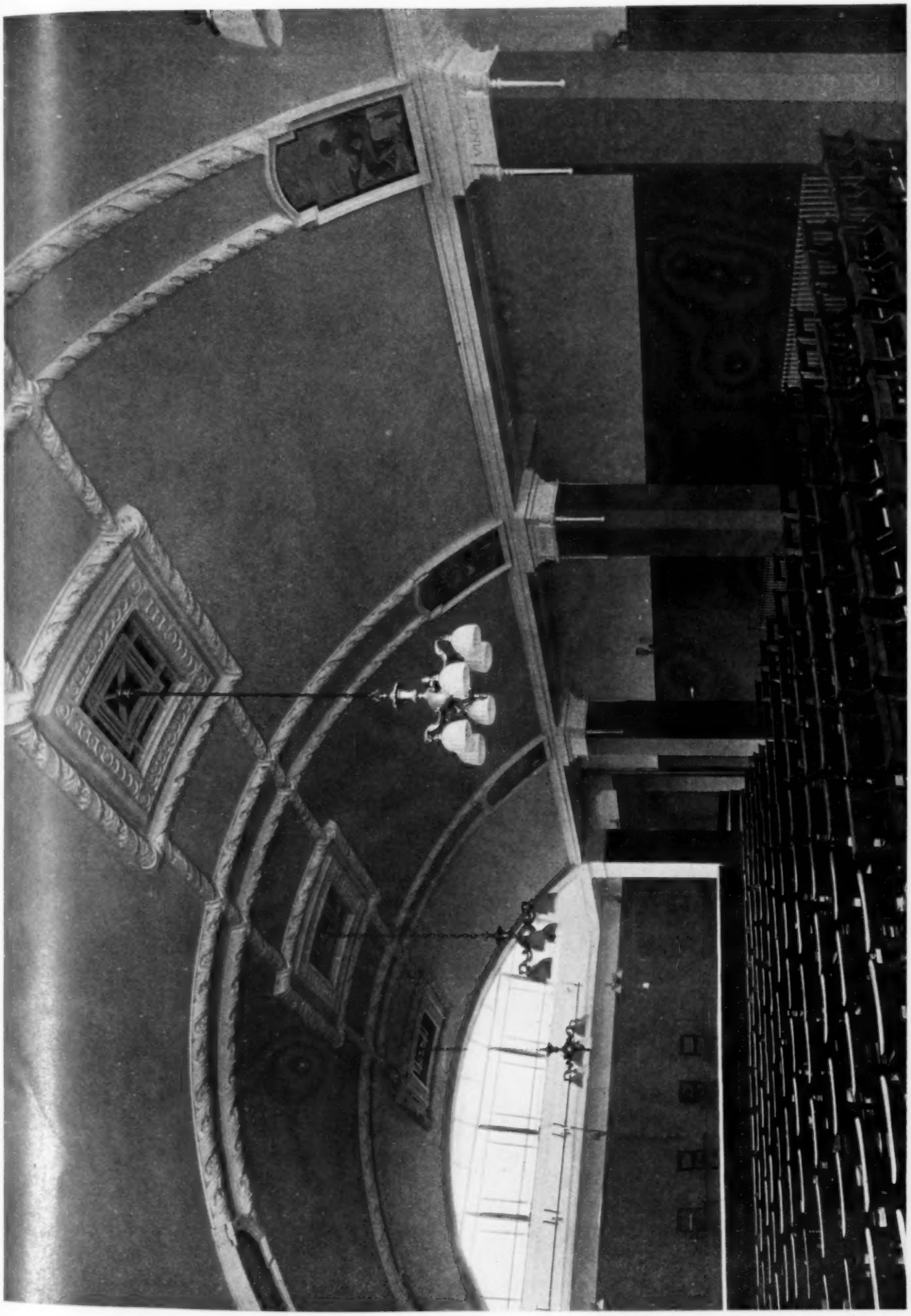


Transport House, Smith Square, Westminster. MESSRS. CULPIN & BOWERS, Architects.

Transport House, Smith Square, Westminster.

MESSRS. CULPIN & BOWERS, Architects.

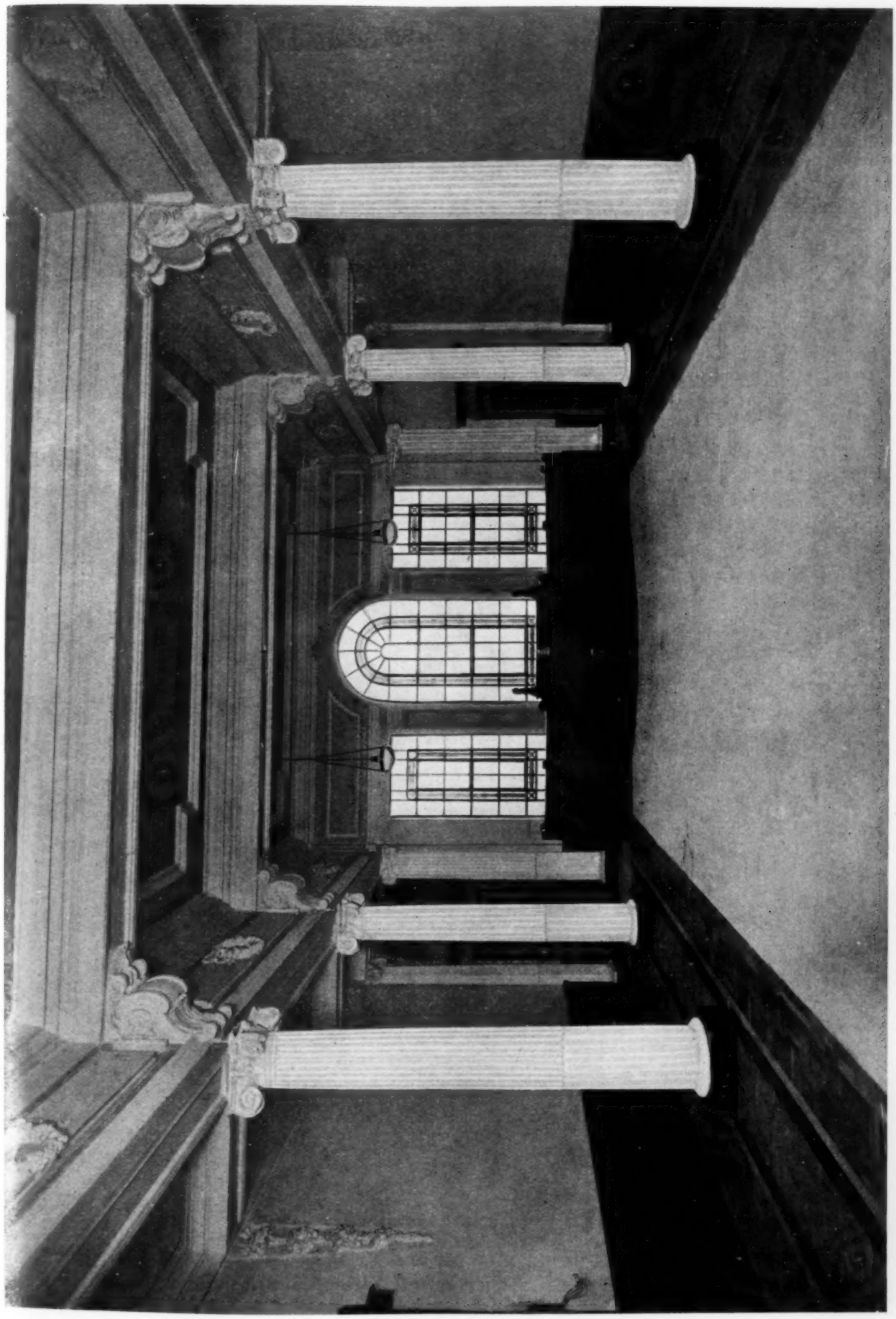
UNIV. OF WIS.



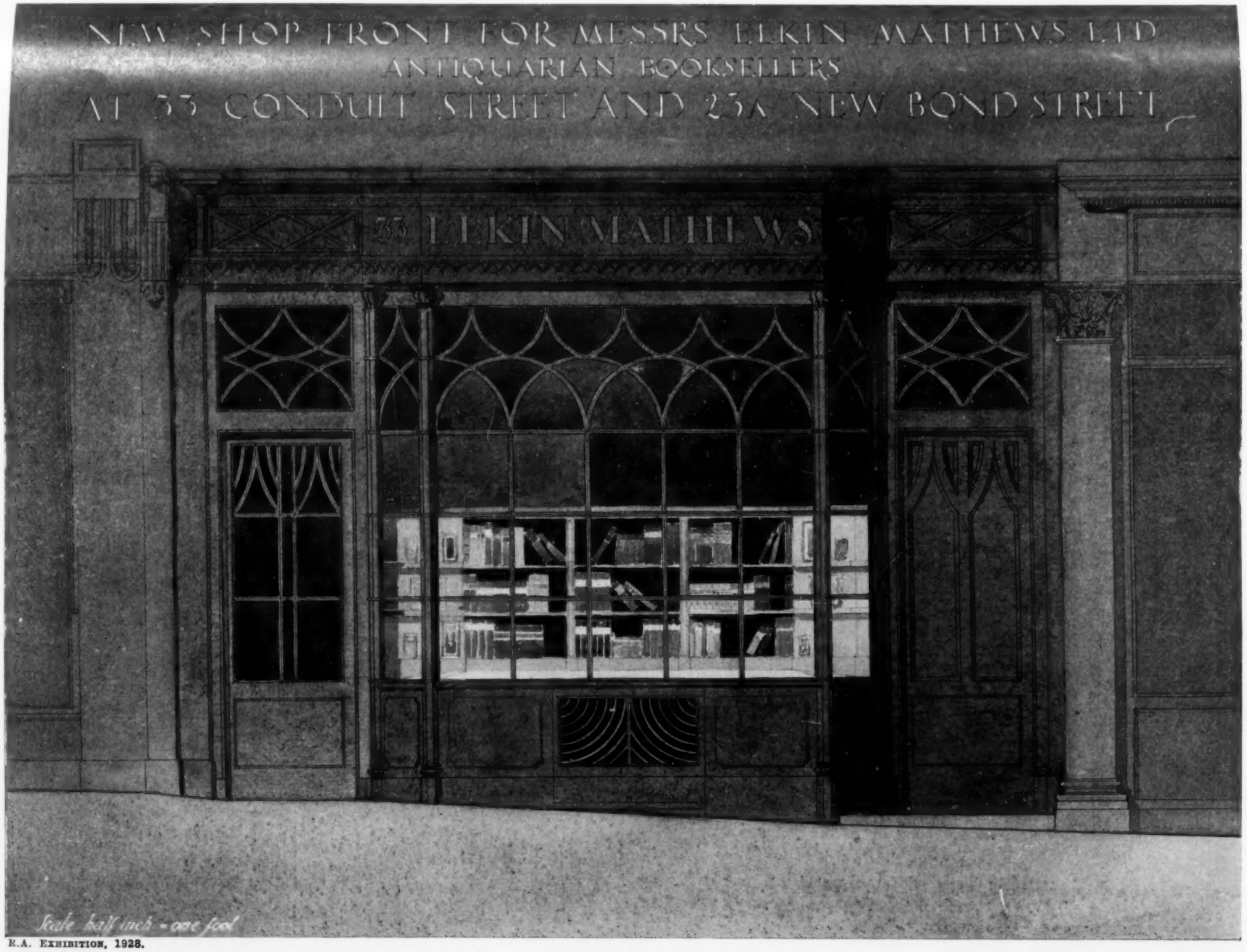
Transport House, Smith Square, Westminster : Pubiic Hall from Gallery.

MESSRS. CULPIN & BOWERS, Architects.

UNIV. OF MICH.



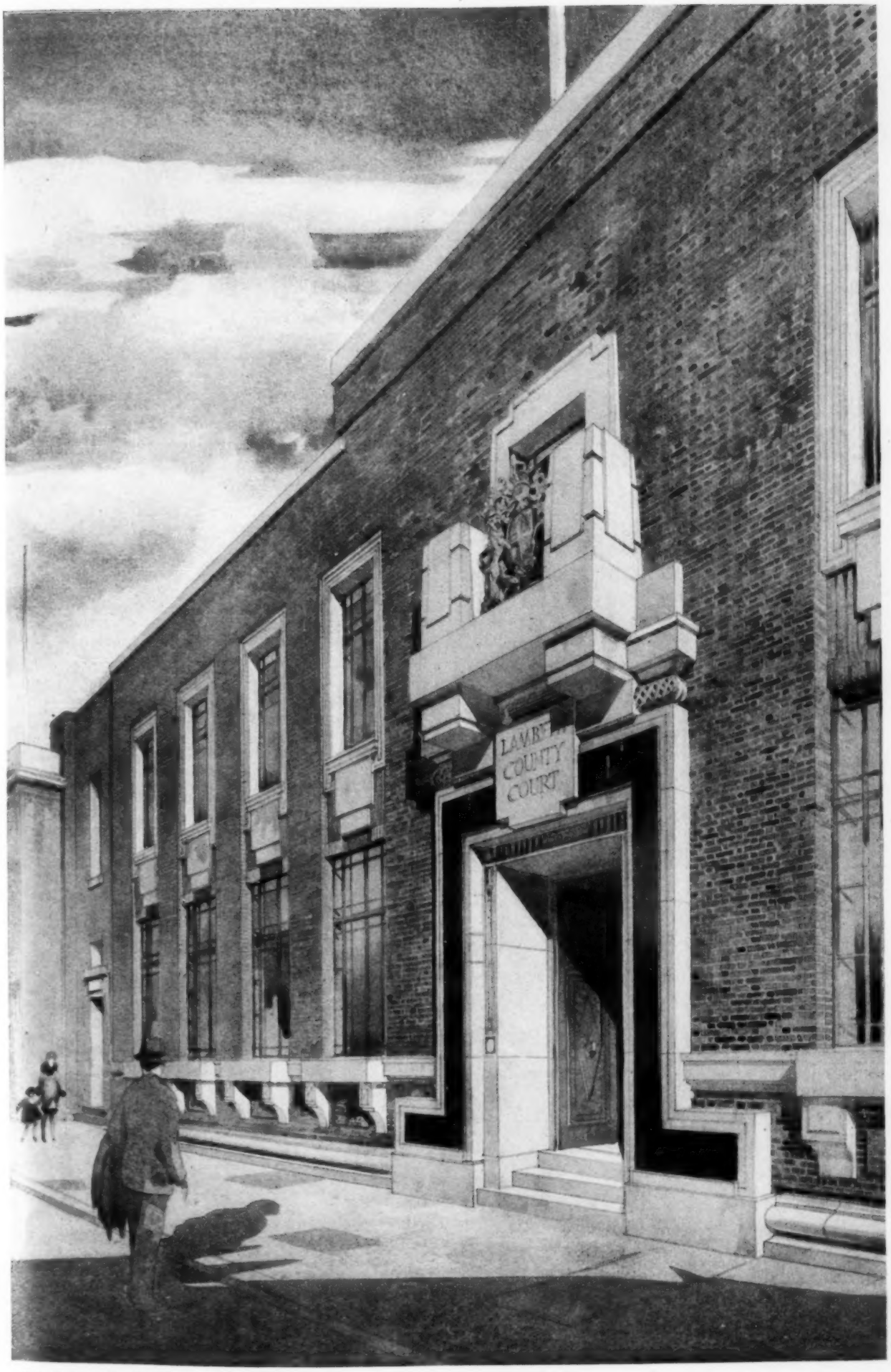
Transport House, Smith Square, Westminster : Council Chamber (before completion).
Messrs. Culpin & Bowers, Architects.


NEW SHOP FRONT FOR MESSRS ELKIN MATHEWS LTD
ANTIQUARIAN BOOKSELLERS
AT 33 CONDUIT STREET AND 23A NEW BOND STREET
33 ELKIN MATHEWS
Scale half inch = one foot

R.A. Exhibition, 1928.

Messrs. Gerald Wellesley and Trenwith Wills, A.R.I.B.A., Architects.

UNIV. OF MICH.

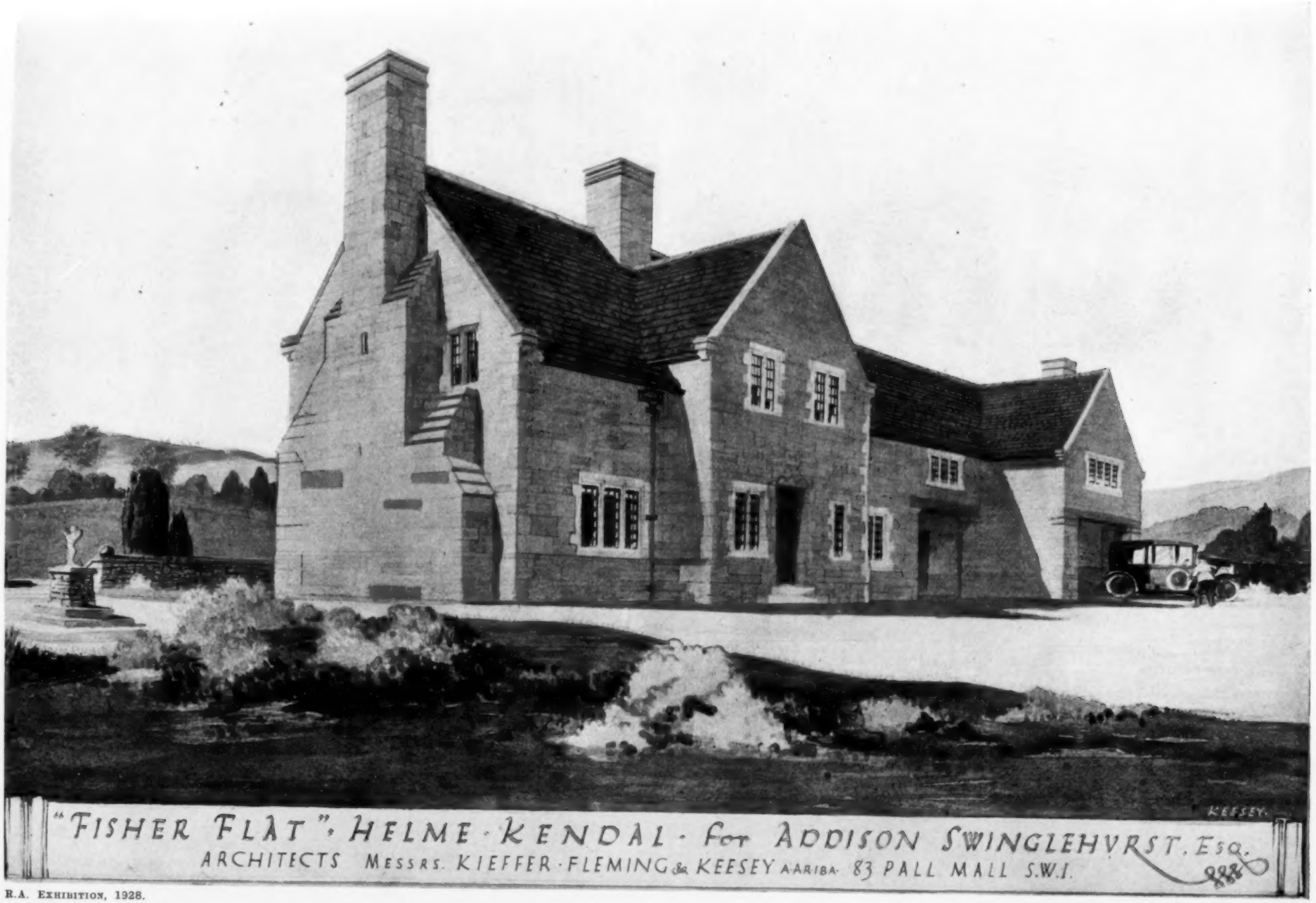


R.A. Exhibition, 1928.

Lambeth County Court.

Mr. John H. Markham, F.R.I.B.A., Architect (H.M. Office of Works).

UNIV. OF MICH.


"FISHER FLAT", HELME · KENDAL · for ADDISON SWINGLEHURST, Esq.
ARCHITECTS MESSRS. KIEFFER · FLEMING & KEESEY AARIBA · 83 PALL MALL S.W.1.
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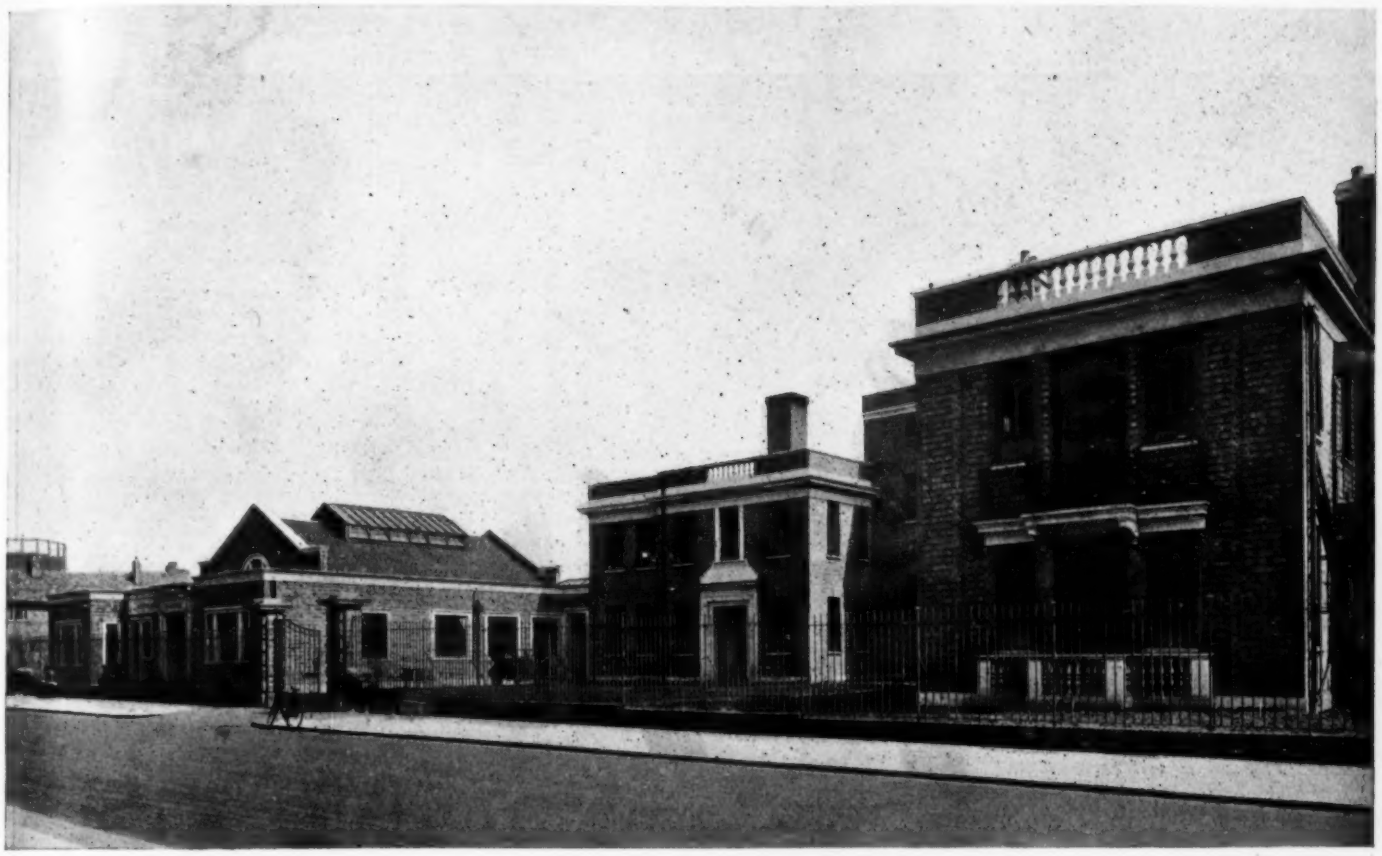
R.A. EXHIBITION, 1928.

UNIV. OF MICH.

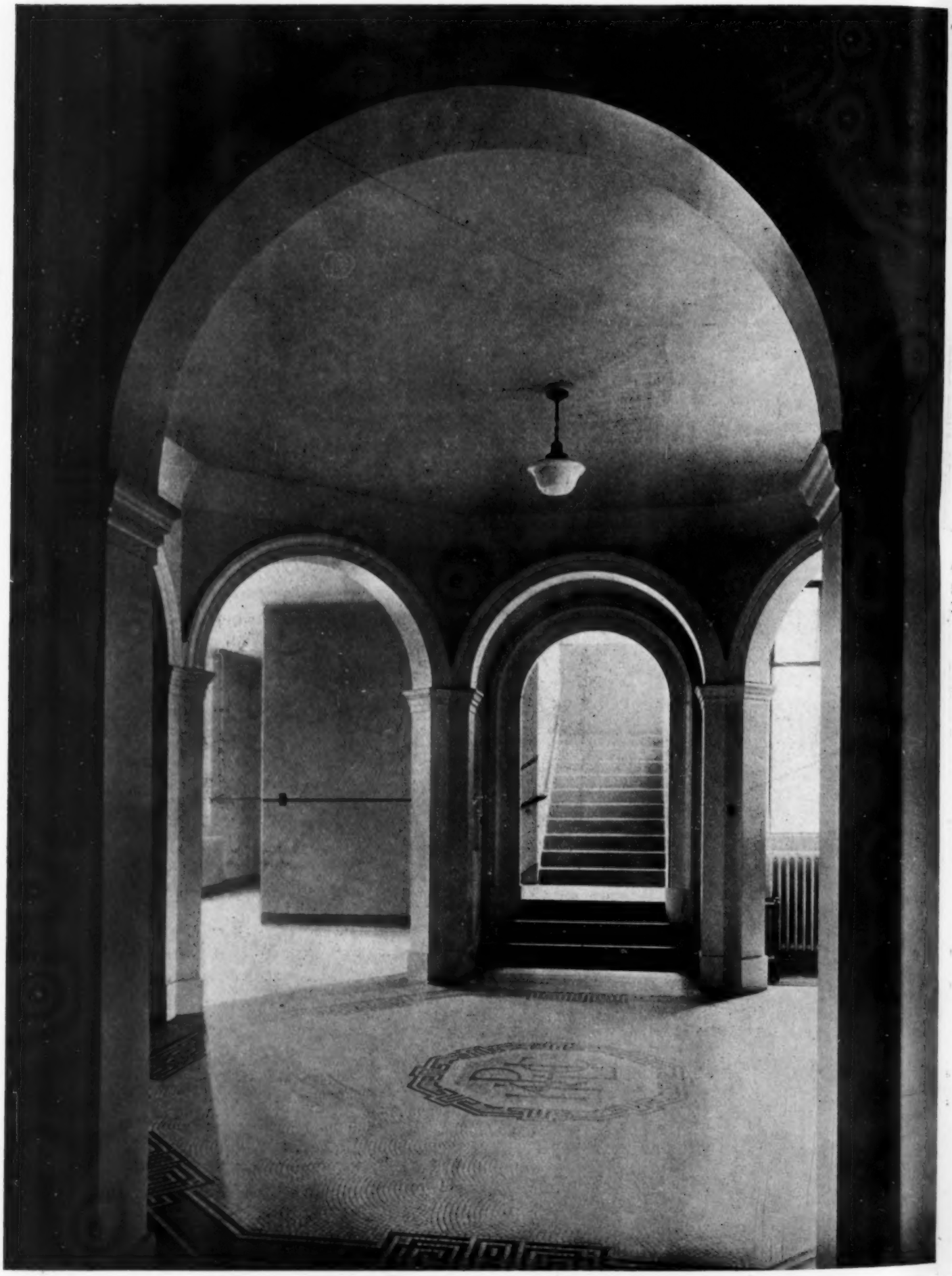


Frontage to Pangbourne-avenue.

A Ward.

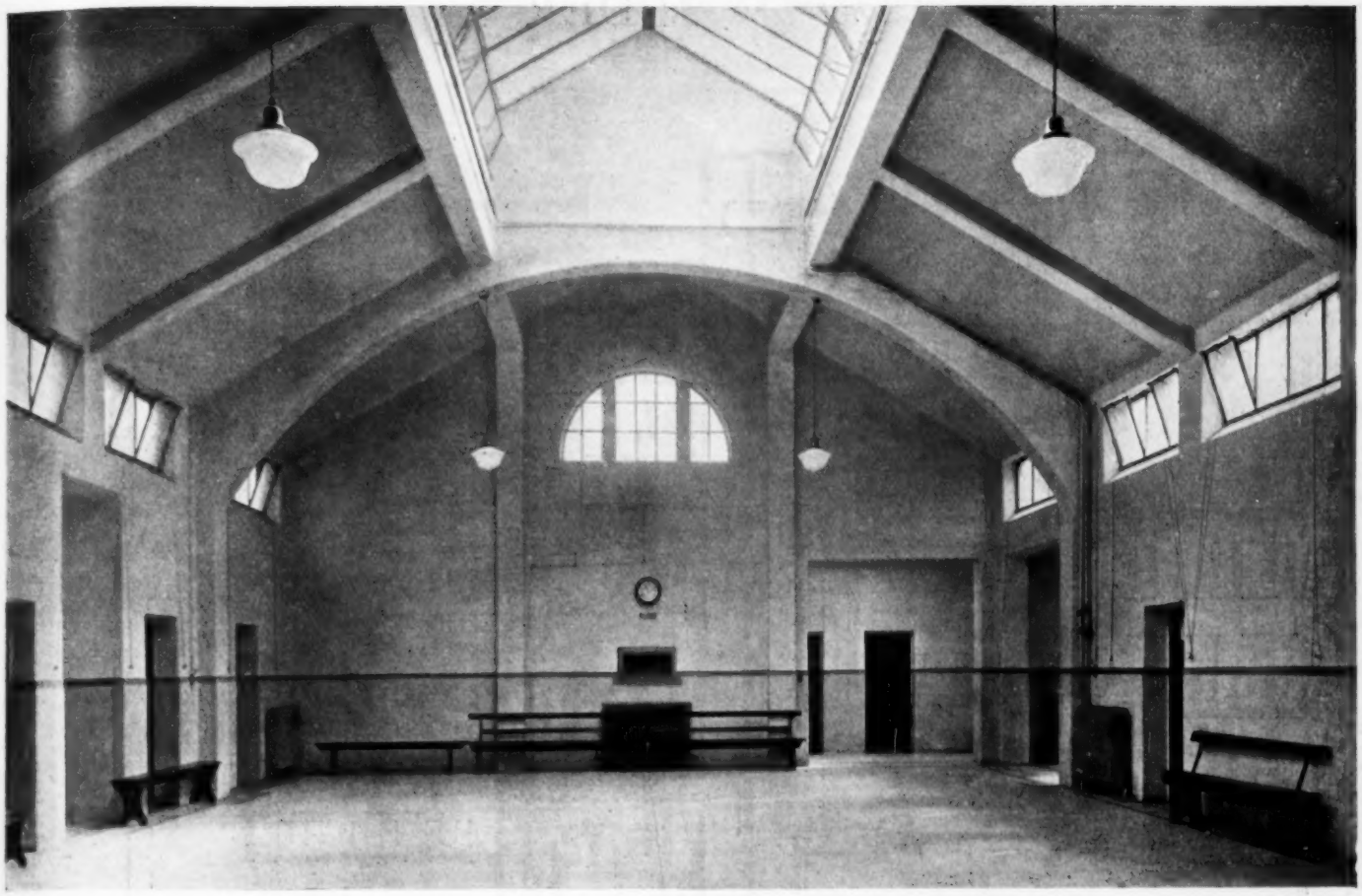
Princess Louise Kensington Hospital for Children.

Messrs. George A. Lansdown (of Messrs. George Lansdown & Brown, FF.R.I.B.A.), and J. T. Saunders, F.R.I.B.A., **Architects.**

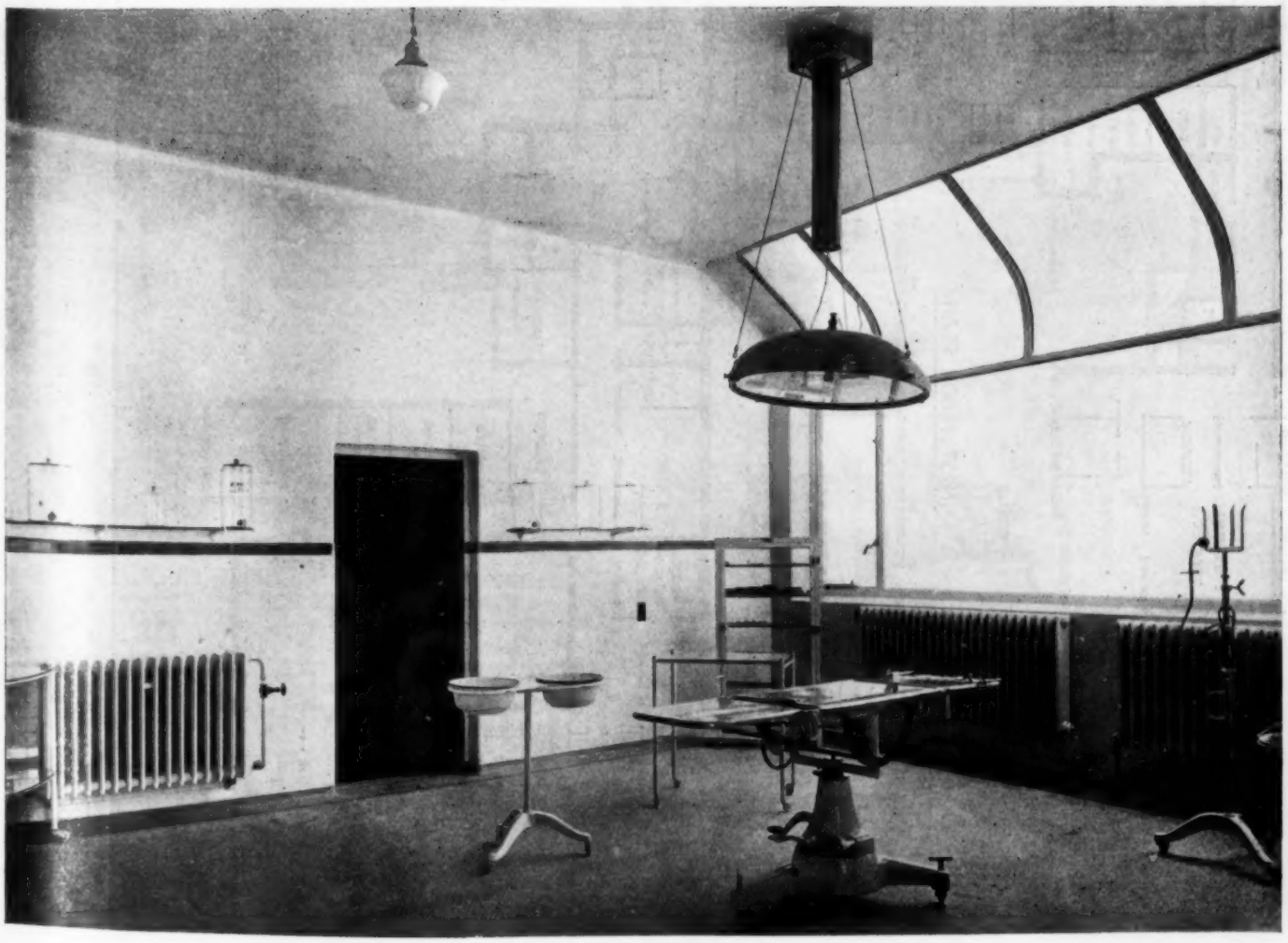


Princess Louise Kensington Hospital for Children: The Hall.

Messrs. George A. Lansdown (of Messrs. George Lansdown & Brown, FF.R.I.B.A.) and J. T. Saunders, F.R.I.B.A., Architects.



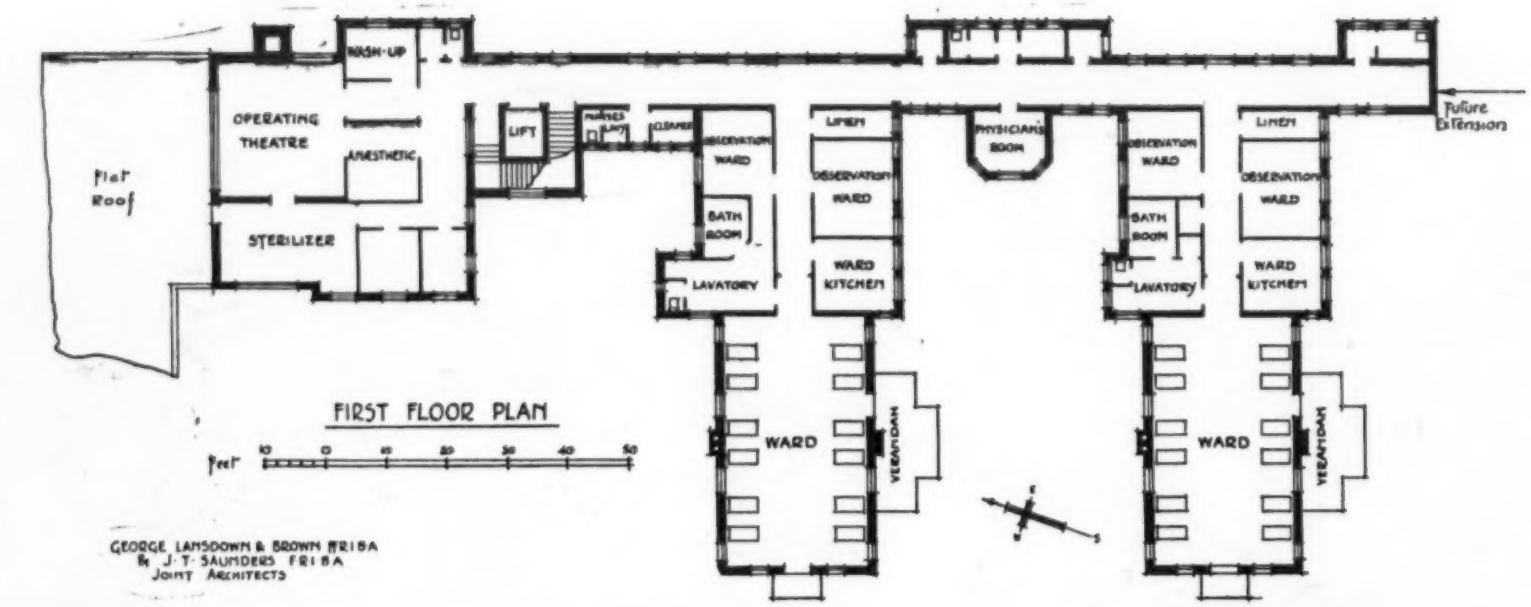
WAITING HALL.

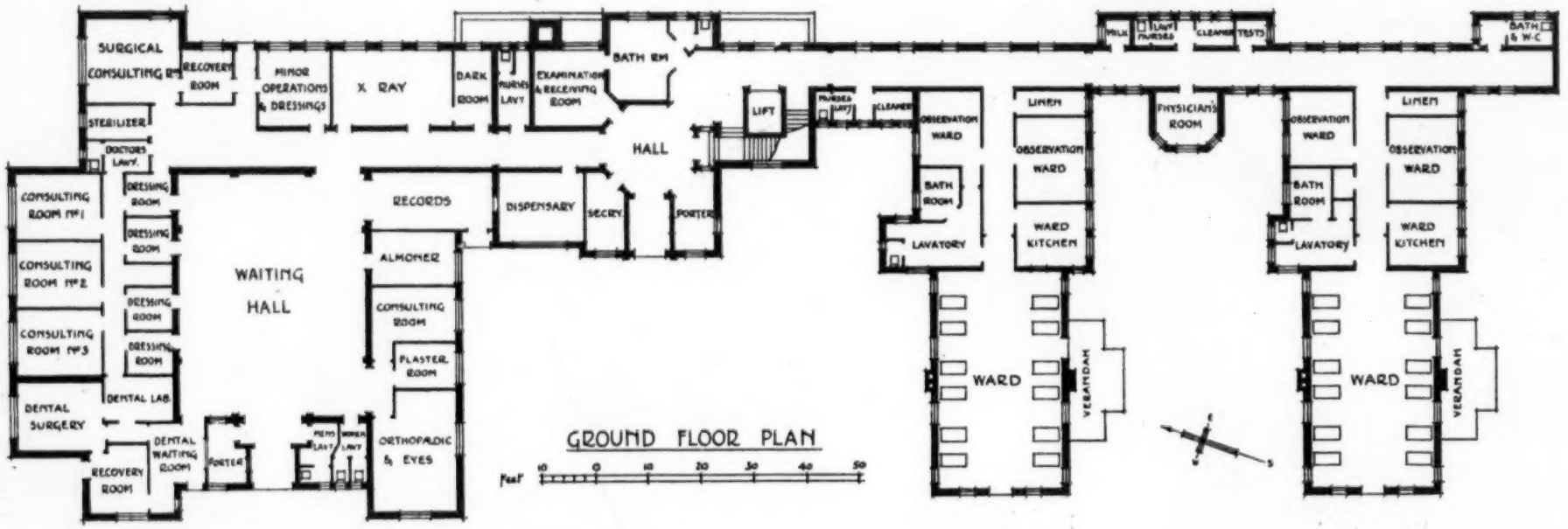


OPERATING THEATRE.

Princess Louise Kensington Hospital for Children.

MESSRS. GEORGE A. LANSDOWN (of Messrs. George Lansdown & Brown, FF.R.I.B.A.) and J. T. SAUNDERS, F.R.I.B.A., Architects.

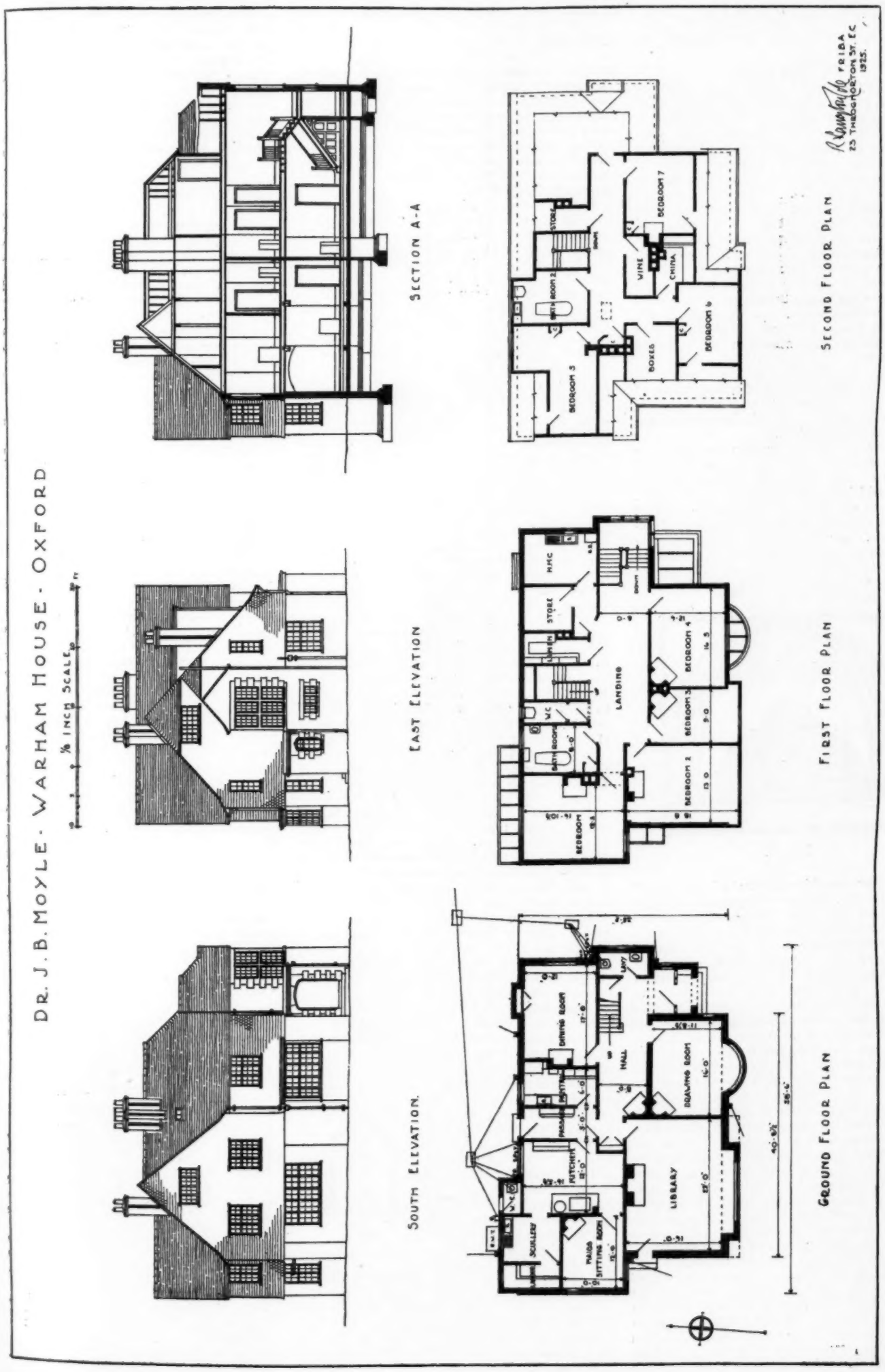




PANGBOURNE AVENUE

Princess Louise Kensington Hospital for Children.

Messrs. George A. Lansdown (of Messrs. George Lansdown & Brown, FF.R.I.B.A.) and J. T. Saunders, F.R.I.B.A., Architects.



"Warham House," Oxford,

THE LATE MR. R. LANGTON COLE, F.R.I.B.A., Architect.

MESSRS. GEORGE A. LANSDOWN (of Messrs. George Lansdown & Brown, FF.R.I.B.A., Architects.

ARCHITECTURE, NATURE AND MAGIC—V

BY W. R. LETHABY.

THE FAR EAST.

"The pillar of the earth shook from its foundation; and the sound was heard unto the extremities of heaven."—Book of Enoch.

WHEN the foregoing chapters had been completed I found through a reference in *Zeus* an important German work on the whole subject. This is by Dr. Robert Eisler, and is entitled "The World Mantle and the Heaven Tent" (*Weltenmantel und Himmelszelt*, 2 vols, 1910). It is so big and learned that again it makes one despair of treating the matter adequately. I can only follow the general drift of the text, and to do my work thoroughly I ought to get some 200 of these big pages translated with a view to incorporating them, but the task is too great, and I can only go on with my own notes while calling attention to a really learned work.

Although Dr. Eisler's treatise is nearly 20 years earlier than these present sketches of the vast subject, my first essay was as many years earlier again, and this is my best excuse for returning to it.

Dr. Eisler treats of cosmic robes and how kings dressed themselves up in heavenly fashions; of the world tree and sky pillars; of the world imagined as a cavern, or a tent, or a house: of cosmical sanctuaries; of new year feast houses and other symbolical observances, etc. An interesting diagram of the Babylonian conception of world construction is given with many other illustrations. From one of these I have sketched Fig. 1, which

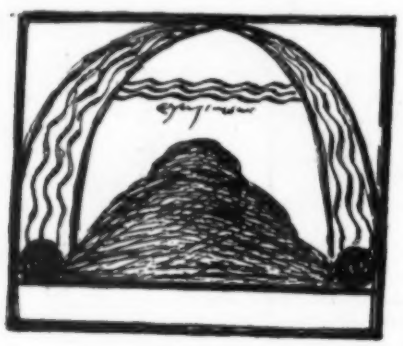


FIG. 1.

is a Syrian monk's picture of the world mountain. Dr. Eisler also gives a plan of the painted floor of the great columned chamber in the palace of Tell-el-Amarna in Egypt, representing water and vegetation, and calls it a "cosmical hall." To any readers who may doubt my general thesis I would say—please read what Dr. Eisler says.

The sacred monuments of India and China embodied the same symbolical lore as has already been traced in Western Asia, Egypt, and Europe. The deeper sources of Asiatic art in the ancient cultures of Mesopotamia and the Indus Valley have already been referred to. Much evidence seems to point to direct derivations from Mesopotamia, but it may be that the more recently discovered Indo-Sumerian sites in the Indus Valley will provide many new facts. Even while I write excavations at Kish are revealing a pre-Sumerian culture having well-developed arts, writing, and a decimal system of numeration. "We have now five scripts of this prehistoric civilisation which spread over Asia from China to the Mediterranean before 4000 B.C., namely, Sumerian, Proto-Elamitic, Indus Valley, early Chinese, and the new script of the Kish area. A great homogeneous culture is now a proved factor in the reconstruction of ancient history. Of the languages spoken by this vast prehistoric culture only Sumerian is known at present, but it is natural to suppose that the other groups spoke cognate languages. The existence of a branch of this culture between Babylon and the Tigris is a revolutionary feature in history. . . . A new and unexpected prehistoric civilisation has emerged in the heart of Mesopotamia whose origins are so remote in time that a date cannot even be conjectured. It perished utterly before 3500 B.C., and its fine ceramic art also disappeared for ever in Mesopotamia." (Professor S. Langdon: *Times*, January 28, 1928).

In the last volume of the *Archæological Survey of India* (No. 30), Sir John Marshall gives a most interesting account of explorations amongst the prehistoric cities of Western India which "help to bridge the gap of some 2,000 years which has separated the prehistoric from the historic age of India." At one of these ancient cities, Harrapa in the Punjab, it has been found that a Buddhist Stupa succeeded an ancient temple on the same site, and this type of monument was probably developed on the western border of India. It is thought that it was the great King Asoka who by the help of foreign artists introduced into Eastern India the use of stone for buildings and sculpture of large scale in imitation of the Achæmenian monuments of Persepolis. Cunningham long ago pointed out that some Buddhist sculptures appeared to be by Greek artists. Within the present year Herr Von le Coq, of Berlin, in a lecture at the School of Oriental Studies in London, stated that it is beyond doubt that India and China borrowed the images of classical Greek gods and adapted them to their own religions. From 500 B.C. China was in touch with Greece and Persia. Alexander conquered N.W. India and founded cities, the populations of which inter-married with the natives. "This race became Buddhist. In Afghanistan and Turkestan Greek art became modified into Buddhist art. The Buddhist religion travelled to China and the Chinese took these Greek types modified by India and Persia. The root of Buddhist-Chinese art is Greek antique art."

How much in the arts of farther Asia was carried forward from the deep source of Indo-Sumerian culture, or how much was subsequently borrowed from the West will be difficult to determine. Probably burial under great tumulus mounds was widely practised over Asia from a very early time. The large Buddhist-built monuments known as Topes or Stupas are architectural developments from tumulus memorials which existed before Buddhism. "It is clear that the Tope or tumulus was the common form of tombs at that period. The Tope is a regularly built pile of stones, the oldest form of funeral monument." (Cunningham, *Bilsa Topes*.)

FIG. 2.

The architectural Tope is a circular monument like a half sphere, or taller, usually having a spire-like erection on the top, and stone railings around beyond the base with handsome gateways in the four directions. These structures resembled very closely some curious sacred monuments which are represented on Greek and Roman coins (Fig. 2). The lower one in Fig. 2 is an idol of Artemis at Perge in Asia Minor (Roscher's *Omphalos*), and the upper one is from a Roman coin (Cook's *Zeus*). Both resemble the Omphalos at Delphi, which marked the centre of the world, and much evidence shows that the topes were monuments that symbolised the sacred Mount Meru of the Hindus, which rose at the centre of a square world enclosed by four seas. A Tope over the grave of an early Indian monarch is said to have been erected where "four principal roads meet" (Cunningham), and Buddhist monuments of all epochs make much of the four aspects.

Topes were either erected to the celestial Buddha or over relics and sacred sites. In the former "the Divine Spirit who is light was supposed to occupy the interior" and was symbolised on the outside by a pair of eyes at each of the four sides of the base or crown of the edifice. The foundations were laid with much ceremony in various materials, including small plates of iron, silver, and gold. The king stationed himself at the centre and with compasses described a circle, and then made offerings on the four sides of the site. He inquired of the architect in what form he would build. The architect then taking some water dashed it into a full vessel, pointed to a bubble, saying, "I will build in this form." Lastly, the ground was consecrated, the boundary being marked out by a "golden plough" drawn by elephants. (Cunningham). The earlier Topes were of semi-spherical form; later they were raised on a circular basement with a pathway reached by steps round about; the latest were round towers surmounted by a domical top. On the crown of the dome was a square pedestal or box from which rose a pinnacle (*chatta*) formed of many umbrella-like canopies which were sometimes gilded. At Sanchi a piece was found of such a canopy, 5½ ft. in diameter and 2 ft. high, hollowed beneath. Above was a mortice for the support of a second canopy. There were usually nine in all, symbolising the Buddhist heavens. The Tope was surrounded by a stone "railing" in which were four gateways made up of stone beam-work elaborately carved, facing the four directions. On these beams were various symbols, that in the centre being a wheel. A record speaks of gems in the centre of the four emblems of the sun. Opposite the gateways against the monument were images of the Four Buddhas. By the gates were very tall and slender detached pillars, some more than 40 ft. high. One Tope illustrated by Fergusson was surrounded by scores of such detached pillars. Lamps were lighted before the statues of Buddhas; the Topes were adorned with flowers and they were centres of elaborate ritual worship. The earliest of those existing probably date from the second or third century B.C. The fine Tope at Amaravati, of which there are important fragments in the British Museum, was traditionally called "Mount of Light." Fergusson, describing the famous Sanchi Tope, says it is built of brick faced with stones. "Over these was laid a coating of cement which was no doubt originally adorned either with painting or ornaments in relief." Fa-hsien, a Chinese pilgrim to India in the fourth century A.D. describes nearly every Tope he visited as "covered with layers of all the precious substances," "the seven precious substances."

The seven precious substances consisted of gold, silver, and precious stones. Cunningham found fragments and beads of these in the relic boxes of two or three of the Topes he explored, and describes them as "a series of the seven precious things usually placed along with the relics of an eminent person." (*Bilsa Topes*, p. 298). As gilding has been found on a canopy or disc of a *chatta* I would suggest that it was these that were covered or coloured with the precious substances. These precious substances seem to have symbolised the planets or seven heavens. Later Topes in farther Asia are understood to be imitations of the celestial mountain and the heavens above it. Fa-hsien tells of the memorial over the skull-bone of Buddha which enshrined a little pagoda over 5 ft. high made of "the seven preciosities." This Tope stood in a court 40 paces square. "If the heavens should quake and the earth gape this spot would not move." Another Tope in a great court was called the "shrine of the Garden of

Gold." Fa-hsien tells again of a monastery which was 80 years in building. "It is about 280 ft. in height, carved and overlaid with gold and silver, suitably finished with all the seven precious substances. Behind the pagoda [Tope] is a Hall of Buddha; its beams, pillars, doors, and windows are all gilt." At Peshâwar in the N.W. was a Tope of the highest rank, "four hundred feet high and adorned with all the preciosities combined." In Ceylon was a Tope 400 feet in height, decorated with gold and silver and all kinds of precious substances.

According to Dr. Giles, the seven precious substances were gold, silver, lapis-lazuli, crystal, ruby, emerald, coral. Other symbolisms are found in the Topes. Several relic chambers were built of stone slabs disposed in *swastica* form, and the entrances were often planned swastica fashion. Fa-hsien says that "Buddha himself built a pagoda [Tope] 70 to 80 ft. high as a model for pagodas in the future. It exists to this day." That is, it was a sacred symbolical or revealed form, not an architectural whim-work. The round central mound, the symbolism of the heavens, the enclosure entered by four ceremonial gates, the larger park or paradise, are all repeated in the Chinese Altar of Heaven at Peking. Bell-shaped shrines over images of Buddha are in China called "heavens."

Direct contact with these monuments may be obtained from several small votive Topes and from the collection of sculptures of the Amaravati Tope at the British Museum; also from objects and casts in the Indian Museum. The small Topes have preserved the central canopied pinnacles and the four statues of Buddha facing the four directions. Some are on high and elaborate bases and are very like the elaborate Topes of Burmah, Java and Siam mentioned in Part II.

I have before me a view of a quite astounding Tope of this type at Bankok, the capital of Siam. The central structure is spire-like in form but more spreading at the bottom. This part is surrounded by many terraces, on which are little shrines, reached by steep flights of steps entered through gateways. The top terrace is nearly halfway up the structure; the "spire" has a strongly banded lower part, continuing, as it were, the multitude of terraces; then comes a tall story of elaborate shrine work containing great statues of Buddha facing the four directions. The upper part is pagoda-like and terminates in a big bunchy finial. At the four corners below are similar spires of about half the size of the central one. This amazing structure must represent the heavenly mountain of the Buddhists.

After the disappearance of Buddhism in India the Hindu temples were built in what I may call mountainous forms (Fig. 3). Com-

FIG. 3.

pare the description of temples in Java given in *The Builder* of January 13 this year, all of which were of the holy-mountain type.

According to Chinese theory, "*K'un-lun* is the central mountain of the world and 3,000 miles in height. There is the fountain of immortality, and thence flow the four great rivers of the world. It is the *Sumeru* of Hindu mythology transplanted into Chinese legend. . . ." "The four Kings of Heaven reside on Mount Sumeru, the centre of the universe. Its eastern slope is of gold, its western of silver, its south-eastern of crystal, and its north-eastern of agate. The Four Kings appear to be a Taoist reflection of the four *Chin-Kang* of the Buddhists" (Werner, *Myths of China*).

The many roofed Chinese towers called pagodas follow the symbolism of the Topes. The earliest of these monuments were practically solid structures. Dr. Bushell illustrates one attached to a temple about 12 miles from Peking (Fig. 4). This is a very curious structure, banded across with 13 cornice-like projections, having little roofs above them like so many eaves; each story being slightly less in size than the one below it. Thirteen is a Chinese sacred number, and Dr. Bushell speaks of this number of stages being often found. Paléologue says that Chinese pagodas have five, seven, nine, eleven, and sometimes thirteen stages. "The idea which inspired this singular type of erection is Buddhist. The numerous stages symbolise the skies superimposed above the earth, where the Bodhisatras await the consummation of their faith. We do not find such towers in India, where they were destroyed during the persecutions" (see also Cunningham, *Buddhist Monuments of Central Asia*).

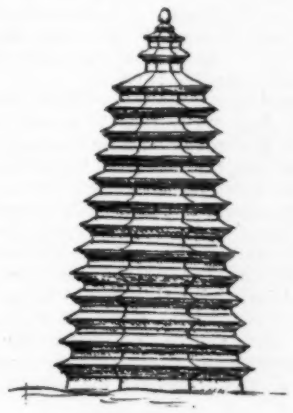


FIG. 4.

In China a great number of these monuments exist, many of great height, and they were being rebuilt up to our own time. In the neighbourhood of Hang-Chow are several. One, built of brick, is octagonal, 13 stories high, and said to be 334 ft. high to the top of the finial. It must be more than 100 ft. in diameter at the bottom. In the narrow spaces between the several "roofs" are windows. This tower, on Moon-girdle-hill, was rebuilt in 1894. A second very slender and acutely pointed pagoda on Precious-stone Hill has been many times rebuilt. A third is said to date from the tenth century. This, the "Thunder-peak Pagoda," is said to hold down the demons of the flood. It is octofoil in plan, in several stages, slightly diminishing upwards. On the mountains opposite Chung King is a large white tower of nine tall stories, all inclining in a nearly continuous line. A pagoda at Soochow, also of nine stories, is 250 ft. high.

A large octagonal pagoda at Han Kow has three pairs of "roofs" over as many stories, and a single roof with tall finial over the top story; other towers have single "roofs" over each of the stories with the exception of the top one. These pagodas, primarily, were erected over relics, but they seem to have also conferred good influences on a neighbourhood, and the tinkling of their wind-shaken bells directed the spirits. Many of them may be ascended by stairs within.

The famous Porcelain tower of Nanking (Fig. 5) was destroyed in 1854, but fragments of it are preserved. It was first built, it is said, in the fourth century, and was reconstructed in the period 1412-31. It was about 200 ft. high. From the finial eight chains hung, each supporting nine bells, and a bell also hung at each angle of the roofs—144 in

FIG. 5.

all. These bells are rung by the wind. Dr. Bushell illustrated a pagoda in the grounds of the Summer Palace at Peking which was also encased in faïence. "The practice of facing buildings with slabs of faïence coated with coloured glazes is very ancient in Asia . . . In the earlier half of the fifth century, artisans are recorded to have come from the north-western frontiers of India and to have taught the Chinese the art of making different kinds of *liu-li* or coloured glazes . . . The glazes used in the decoration of this pagoda are five in number: a deep purplish blue, a rich green, a yellow approaching the tint of the yolk of an egg, a *sang-de-bœuf*, and a charming turquoise-blue. The fivefold combination is intended to suggest the five jewels of the Buddhist paradise. A jewelled pagoda of portentous dimensions is supposed, in the Buddhist cosmos, to tower upwards from the central peak of the sacred Mount Meru, to pierce the loftiest heaven, and to illuminate the boundless ether with effulgent rays proceeding from the three jewels of the law and the revolving wheel with which it is crowned. Speculative symbolism of this kind is carried out in the form of the pagoda. The base, four-sided, represents the abode of the four maharajas, the great guardian Kings of the four quarters, whose figures are seen enthroned within arches. The centre, octagonal, represents the *Tushita* heaven, with eight celestial gods, Indra, Agni, and the rest standing outside as protectors of the eight points of the compass; this is the paradise of the Bodhisats prior to their final descent to the human world. The upper story, circular in form, represents the highest heaven, in which the Buddhas reside after attaining complete enlightenment; the figures in niches are the five celestial Buddhas, seated on lotus pedestals." This very complete cosmical structure had seven "roofs," most of which

covered reductions of size so slight that they were like boldly projecting eaves only. Two of these, with a small space between them, were above the lowest cubical stage, two more were above the octagonal story, while the summit was crowned by three which formed a group so similar to those of the Temple of Heaven that the likeness must have been intentional.

Dr. Bushell also illustrates a Buddhist temple, about two miles from Peking, which was dedicated in 1473. "The picturesque structure commonly called the Five-Towered Temple is said to be a copy of the ancient Indian Buddhist temple of Buddhagaya. . . . The marble stele set up beside it states that in every detail it was an exact reproduction of the diamond throne of central India. The temple is surrounded by a carved railing of Indian design: the body, about 50 ft. high, is square and of solid construction, composed of five tiers of stones, carved with Buddhas seated in niches. Inside the doorway are two staircases piercing the solid stonework leading to the platform above, which displays Buddha's footprints and symbols. Within the five pagodas, of Indian form, the central one larger than the rest, the golden Buddhas brought from India are said to be enshrined." The photograph shows five square pagoda-like structures similar to Fig. 4, crowded together on the high solid basis. The Chinese suppose that the firmament has supports at the angles, and it may not be doubted that this monument represents the group of sky-mountains; compare the description of the Pagoda at Bankok above and the dominance of the five-jewel type of composition in Indian architecture. It is said that during the ancient dynasty of Chou (eleventh century B.C.) the emperors erected palaces of great elevation, called *tai* or *hou*, access to the several stages of which was by means of external stairs. Some were over 300 ft. high, and during several centuries the fashion was a ruinous folly of the Sons of Heaven. A writer of 200 B.C. says: "When I lift my eyes to the *hou* of stone, I seek its roof in the clouds." Some semi-modern drawings exist which purport to show these aspiring structures as closely resembling Assyrian Ziggurats. M. Paléologue (*L'Art Chinois*), from whom I quote, points out the resemblance as "too striking to be fortuitous," and adds: "One must perhaps admit a Chaldean origin for the ancient Chinese *tai*." Probably the whole story is more or less mythical, and might be an outcome of the idea of heavenly palaces. The stories, in any case, must be ancient. Fa-hsien, the Buddhist Chinese visiting India *c.* 400 A.D., heard that in the Deccan there was "a monastery made by hollowing out a great rock. It has five stories, the lowest being in the form of an elephant, with 500 stone chambers; the second, in the form of a lion, with 400 chambers; the third, in the form of a horse, with 300; the fourth, in the form of an ox, with 200; and the fifth, in the form of a dove, with 100 chambers. At the very top is a spring of water which runs in front of each chamber, encircling each story, round and round, in and out, until it reaches the bottom, where it flows out by the door. In all the chambers the rock has been pierced to admit light, so that they are quite bright. At the four corners of these excavations the rock has been bored, and steps have been made by which the top can be reached. The men of the present day, being small, go up by the steps; but the men of the past went up at a single step. . . . At a distance the inhabitants frequently see people come flying and enter the monastery. Fa-hsien was unable to go thither, he merely states what he heard" (Giles).

The terraced pyramids of Central America appear to be of the same general type of sacred-mountain temples, and it is becoming more and more evident that the ideas embodied in building them must have been carried from Asia.

Ancient sacred architecture in all lands was the tradition of building world temples.

"THE BUILDER" DEBATE

VI.—ARCHITECTURAL COMPETITIONS. THE SCHEME OR THE MAN?

SIR,—I must confess at once that I find it a little difficult to oppose the motion tabled by "Positive" because I cannot help feeling that the broadness of his outlook is admirable. But when one examines his argument one is inclined to think that this very broadness has led him astray. His contention that the object of a competition is to find the man and *not* the scheme can be countered at once by asking "Why go to the trouble and expense of holding a competition?" "Why not choose your man by his past exploits?" This would, incidentally, rule out any chance of the discovery of youthful and unknown genius so that one will assume that this is "Positive's" sole reason for holding a competition—to give the unknown a chance.

But what of the promoter? Early in his remarks "Positive" says: "Obviously a competition in connection with a great building project is held, not for the especial favour of the architectural profession, but for the good of the promoters, or the interests which they represent." Quite! But later he would make the only binding clause in a competition the sending-in date. Poor promoters! They have spent considerable time in compiling the list of their requirements; they are the only folk who can say from past experience what their accommodation should be and how the building should work in order to be of the greatest use to them. Yet their wishes are to be entirely ignored! The one that pays the piper is to be denied the right of even suggesting a possible tune.

A competition, in the widest sense as suggested by "Positive" would resolve itself into a students' affair entirely. Supposing the programme were for a town hall. He would have each competitor submit a design for an ideal town hall, according to his own imagination, whereupon the assessor would merely choose from the many the one design that approached nearest to *his* ideal. (Admittedly this would be a labour-saving device for both competitor and assessor. In the course of time one could imagine competing architects equipped with a series of stock designs for various buildings.)

To resume—the winner is chosen and then, according to "Positive," sits down to work out a scheme to suit the requirements of the promoters, and the site. He starts practically *de novo* with all his difficulties before him, and the promoters and assessor have had no opportunity of comparing his solution with any other. Can their interests be best served by this method? I think not. I will even go farther and suggest that the competitor who can produce a design entirely untrammelled by the special requirements of the promoters and the particular difficulties of the site is not necessarily the man who will serve them best in producing the actual scheme. Good architecture does not stop short at providing a good exterior. A fine building is one that not only looks well but *functions* properly—one that fulfils in the best possible manner the many requirements demanded of it by those who have to live and work in it. The practical needs cannot be overlooked—no æsthetic considerations can excuse this. Neither should there be need for excuse. It is not beyond the wit of any good architect to design a scheme where practical and artistic considerations are equally well met.

"Positive" may protest that he points out that he is not "desirous of a piece of fine architecture that cannot be translated into fact," but how can he avoid it by allowing an entirely free hand to competition architects? No two projects ever present the same problem. Each is a problem in itself and should be treated as such. The object of a competition is to choose the best from the many and varied solutions sent in. The assessor who, as "Positive" well says, cannot possibly foretell the best solution, has an opportunity of comparing many ingenious solutions, and is thereby enabled to look at the scheme from every possible angle and explore every channel in the interests of the promoters. This is his duty and for this he is paid.

Although "Positive's" description of the "disappointed children who fill the correspondence columns with their grievances" is particularly apt, I cannot help feeling that he has allowed them to influence him to some degree—hence his desire to have the only binding clause the sending-in date.

A competition design is only a *sketch* project—the programme can only be *suggestive*.

I suggest that the standard set of competition conditions nowadays is as free and open as anyone can reasonably expect. The only mandatory clauses are:—

(*a*) The design must be sent in by a certain date.

(*b*) It must give substantially the amount of accommodation asked for.

(*c*) It must not exceed the limits of the site.

(*d*) It must not exceed a certain cost. (Within a fair margin.)

(*e*) The competitor must not disclose his identity or influence the decision.

This has never in the past prevented competitors reaping the reward of their courage when they have shown a greatly improved scheme as the result of varying the programme. Time and again assessors have shown that they are sufficiently big-minded to be bound by the spirit and not the letter of the conditions. We are all acquainted with the disgruntled competitor who cannot differentiate between an architectural competition and a cross-word puzzle, and he is rightly ignored.

The suggestion that the statement of any desire of the promoters may unduly influence the competitor in working out his scheme, I do not consider as of much importance as this shows that the competitor is tackling his problem in the wrong manner.

The whole secret of successful competition planning is the ability to grasp the essential facts. A knowledge of the fundamental requirements can only be obtained by weighing up and sifting the data supplied by the promoters. Practically every competition hinges on the question of the treatment of one big idea—the details follow mechanically. There is nothing to prevent vision and daring under the present system except the timidity of the competitor. Certainly the statement of the multitudinous details of accommodation required adds to the difficulties of a competing architect, but it is his job to tabulate them in their degree of relative importance and probe them for the governing factors.

To sum up, I feel myself to be running parallel rather than contrary to "Positive's" theories. In his desire for freedom for the competitor I feel that he is unduly stressing a point that was never in doubt among those who treated a competition in the right spirit. I therefore reply that the object of a competition is to find the best scheme, and in finding the *scheme* one inevitably finds the *man*. NEGATIVE.

New Power Station, Liverpool.

Liverpool Corporation have decided to build a big generating station at the Mersey Docks. It will be one of the principal power stations in the Lancashire area, and will play an important part in the scheme for North-West England, now being completed by the Electricity Commissioners. The first stage of the scheme will cost £1,600,000. The capital charge on the expenditure will be borne by the Central Electricity Board. The proposed site is the Clarence Dock, and arrangements are being made to purchase it from the Docks Board.

ILLUSTRATIONS

(*Continued from page* 937.)

Shop Front, Conduit-street.

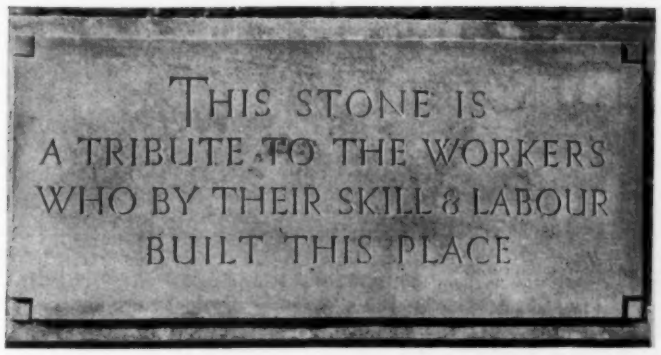
The new shop front for Messrs. Elkin Mathews, Ltd., at 33, Conduit-street and 23a, New Bond-street, has been designed by Messrs. Gerald Wellesley and Trenwith Wills, A.R.I.B.A. The firm being antiquarian booksellers, it was considered that Walpolean Gothic would make an appropriate setting for the goods displayed in their window. The shopfront is entirely carried out in wood painted a very dark green. The lettering is gilt.

"Fisher Flat," Oxenholme, Westmorland.

This house contains two reception rooms, kitchen, scullery, ground-floor lavatory and w.c.s, garage and six bedrooms. It is built on high ground overlooking the valley near Oxenholme, with all the principal rooms facing south or south-west. The external walls are built entirely of local limestone and are about 2 ft. thick. The mortar is kept back a few inches from the face, giving the effect of open joints. The mullions and transomes and all window dressings are of Darley Dale stone moulded inside and out. The dressings of the doorways and gable copings are also of Darley Dale stone. The window openings are filled in with iron casements and leaded lights. "Vita" glass is used in the drawing-room window. The roof is covered with light sea green Tilberthwaite slates. The floors of the hall, drawing-room and dining-room are of oak. Those of the kitchen and scullery are tiled with brown quarry tiles. The window seats in the principal rooms and the staircase are all of oak. The four largest bedrooms are fitted with basins with hot and cold water and tile surrounds. All bedrooms have convenient hanging cupboards. All the fireplaces are being carried out in Darley Dale stone or brick and tiles to the design of the architects. The general contractors are G. F. Martindale and Son, of Entry Lane, Kendal. The iron casements have been made by the Albany Forge, Ltd., High-street, Mortlake, and the sanitary fittings and stoves and range are being supplied by McDowall Steven and Co., of Upper Thames Street, London, E.C.4.

The architects are Messrs. Kieffer, Fleming and Keesey.

Transport House, Westminster: South Entrance.
MESSRS. CULPIN & BOWERS, Architects.



Transport House, Westminster: Commemorative Stone.

"Warham House," Oxford.

This residence was designed, and carried out in Mansfield Road, Oxford, under the superintendence of the late Mr. R. Langton Cole, F.R.I.B.A., and was completed in 1924. The house contains a large library, and smaller dining-room and drawing-rooms, besides the kitchen, maid's room and usual offices. There is a spacious landing on the first floor and seven bedrooms, and two bathrooms, and from the first and second floor a very attractive view of the spires of Oxford is obtained over the adjoining property of Mansfield College. The house is brick built throughout, the staircase bay and the ground floor walls being covered with cream-coloured roughcast, and the upper part and roof with dark red and purple tiles. The chimney-stacks are of red brick. The windows of the staircase, and the door and window of the porch, are treated with Clipsham stone, and all the sashes are of iron.

The contractors were Messrs. S. Hutchins and Son, of Oxford, and Mr. J. Dobson was the clerk of works.

Lambeth County Court.

The drawing from which this reproduction is made is now on exhibition at the Royal Academy. The architect is Mr. John H. Markham, F.R.I.B.A., of H.M. Office of Works.

Princess Louise Kensington Hospital for Children.

This hospital is in Pangbourne Avenue, St. Quintin Avenue, North Kensington, and has both out-patients' and in-patients' departments. The out-patients' department has dressing-rooms, consulting-rooms, a complete dental unit, and departments for orthopædic and eyes, with a well-lighted waiting hall; also an operating theatre for minor operations, X-ray room, and dark-room. There is a separate entrance to the in-patients' department which consists of a hall, examination and receiving-rooms, secretary's offices, dispensary and two ward blocks, each self-contained with observation wards, kitchen, lavatory, etc. On the upper floor there are two further wards, being complete units, used at present for the nurses' quarters. There is an up-to-date operating theatre with steriliser, dressing-rooms, anæsthetic room, etc. An administration building and nurses' quarters are to be erected shortly. When this is done, the hospital will contain, besides the out-patients' department, 64 beds for in-patients.

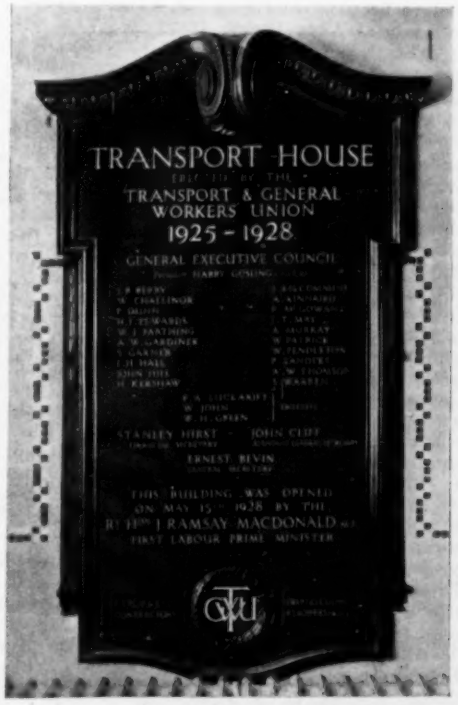
The building contractors were Messrs. Holliday and Greenwood, and the consulting engineer Mr. John Dewar, and Mr. Harold Lansdown quantity surveyor. The following were sub-contractors:—Caxton Floor Co., Ltd., constructional floors; Dawnay and Sons, Ltd., steelwork; Duncan Watson and Co., electrical engineers; Keymer Sussex Brick Co., bricks; A. C. W. Hobman and Co., Ltd., artificial stone; Jos. F. Ebner, wood block flooring and terrazzo; Lawfords, asphalt; Humphries, Jackson and Ambler, Ltd., steel sashes; Henry Hope and Sons, Ltd., steel lantern lights; Z. D. Berry and Sons, heating and hot-water; Marryat and Scott, Ltd., lift; Tylors, Ltd., sanitary fittings, etc.; MacDowell Steven and Co., Ltd., ironwork; Rogers, tiling.

The architects are Messrs. George A. Lansdown, of George Lansdown and Brown, FF.R.I.B.A., and J. T. Saunders, F.R.I.B.A.

Town Planning Progress.

The following town-planning progress in England and Wales for the month ended December 31, 1927, is recorded by the Town-Planning Department of the Ministry of Health:—

Town-planning Scheme approved (Stage C.C.)—
Cambridgeshire: Cambridge T.C.
Preliminary Statements submitted (Stage B)—
Hertfordshire: Barnet U.D.C.
Middlesex: South Mimms R.D.C.
Yorkshire (West Riding): Bingley U.D.C. (No. 2).
Resolutions received (Stage A)—
Buckingham: Eton R.D.C.
Cheshire: Bowden U.D.C.; Bucklow R.D.C. (No. 3).
Devonshire: Torquay T.C. (No. 5).
Essex: Colchester T.C.; Lexden and Winstree R.D.C. (Colchester T.C.); Tendring R.D.C. (Colchester T.C.); Wivenhoe U.D.C. (Colchester T.C.).
Middlesex: Hampton Wick U.D.C. (No. 2).
Surrey: Weybridge U.D.C.
York: York T.C. (No. 6).



Transport House, Westminster: Commemorative Panel.

FIRE BRIGADES' CONFERENCE AT PORTSMOUTH

On three consecutive days, commencing on May 23, about 250 fire-masters and delegates from municipal authorities attended the 26th Annual Conference of the Professional Fire Brigades' Association at Portsmouth. The rendezvous was the Guildhall, a fine building designed by the late William Hill, F.R.I.B.A., in the Classic style Delegates were present not only from all parts of England, Wales and Scotland, but also from Shanghai and Singapore. Commandant André Busche, a member of the Superior Council, and the French Home Secretary, attended to represent France.

The retiring President, Firemaster W. J. Paterson (Perth), occupied the chair at the beginning of the session. Later, the new President for the ensuing year, Inspector C. W. Gould, M.I.FireE. (Portsmouth), was duly elected, and took charge of the meetings.

The Mayor (Councillor Frank J. Privett, J.P.), attended by the Town Clerk (Mr. F. J. Sparks) and the Chief Constable (Mr. T. Davies), cordially welcomed the visitors.

Firemaster Paterson, in his retiring address, said their association was receiving favourable support from municipalities, and there was a great future of public utility before it.

The new President, upon taking the chair, spoke of the commendable spirit uniting the association and municipal authorities. The fire service was doing splendid work, and consequently lives and property were being made more secure.

At the conclusion of the morning conference, the Grand Reception Luncheon, by kind invitation of the Rt. Worshipful the Mayor of Portsmouth and the Mayoress (Mrs. F. J. Privett), took place. Nearly 500 delegates and friends assembled.

The Mayor, in giving the toast of "The Association," outlined the history of fire-fighting. The ancients of Babylon, Alexandria, and Rome, he said, had their fire problems. Organised effort in England dated from the Great Fire of London. Before that much was left to Providence. The City of London drew up rules, some very quaint. Every house had to have a ladder, neighbours were expected to help neighbours in the event of fire, and barrels of water had to be placed outside the houses. About the year 1650 a Dutch engineer, Van der Hyden, invented various novelties, and was a pioneer of the modern fire-engine appliances. In 1721 the first fire-engine made in this country put in its appearance, but it was very different from the giants of to-day. Steam was first applied to fire engines in 1829, but was not adopted in London before 1861. From the ashes of the Great Fire of London sprang not only the efforts to cope with fire, but also the great insurance companies, who maintained their own fire brigades. Marks or plates for identification were affixed to the front of buildings, and it was—so the speaker understood—a common occurrence for a fire brigade to turn out, find that the building was not insured by their company, and was not their job. Thereupon they would leave the fire to its own resources. Another condition was that owners of buildings had to have hooks fastened into the façades of the premises insured, and it sometimes happened that the fronts of the buildings were pulled out. How would some of the present-day bungalow-type buildings fare? During the last forty years the loss of life by fire had not exceeded an average of one per annum. The greater number of deaths were from suffocation before the brigade arrived, or perhaps knew of the fire.

In reply, Supt. Gould said he hoped that the time was approaching when every small community would have the protection of a modern fire service. In Great Britain every year £10,000,000 to £12,000,000 damage was caused by fire, and to this figure must be added the consequent enormous unemployment and losses to local rates.

During the afternoon the Mayor opened the Exhibition of Fire-Fighting Appliances at the Connaught Drill Hall, and made a tour of the stands, accompanied by the Mayoress and Miss Privett. The public were then admitted.

On the second day of the conference an instructive paper, entitled, "Half a Century Review of the Fire Service," was read by Chief Officer J. W. Dane (Croydon), who said that as early as 1734 a Dr. Fuches, of Germany, had invented balls to be thrown on a fire to extinguish it instantly. As early as 1792 one of the ingredients of the foam of to-day, "Sulphate of Aluminia," was used by M. Von Aken, of Stockholm. Commercial progress had brought in its train greater buildings, greater quantities of goods and greater values, and, most important of all, greater numbers of people accumulated on less ground space in the business centres. The older buildings were often less in cubic capacity, of more solidity, with less concentration of merchandise. The modern demand was for natural light, improved supplies of air, heating at a uniform temperature, and efficient artificial lighting. These demands had evolved buildings that were admirably suited to propagate a fire once it had started. It must be remembered that the structure might be of such construction as not to burn, but the contents placed therein would, and when they did the heat was so concentrated in a building of this class as to bring about its collapse. Modern building demands were demonstrated in the structures of great cubic capacity that had come into being, particularly during the last half-century. London got powers by Act of Parliament in 1908 to limit cubic capacity to 240,000 c.f. in one cell, with permission to grant up to 500,000 c.f. in one cell under special conditions. The change in the methods of construction was being utilised to the utmost in the great re-building schemes that were in progress in the centres of towns up and down the country, coupled with the development of the "shop" into the "store." Fires in these buildings were phenomenally quick, and if not retarded or held by sprinkler protection, a conflagration was certain if any item of progress in the work of the fire-fighters was delayed or impeded by imperfect work by untrained units. The speaker believed that up to the passing of the Public Health Act, 1875, building regulations were more or less an unknown quantity. The modern builder had the benefit of supervised construction of buildings, particularly as to stability of walls. He would still further benefit if the Minister of Health, when getting out model building regulations had the advice of that Association on hearths, flues, strength of floors, temporary buildings, garages, etc. "Trouble," said the speaker, "is in store for the next generation when gas flues are used for vents for combustion stoves, which are certain to be superseded by gas stoves with the poorer residents of the building." Likewise with the leaving of strength of joists to the discretion of the individual building inspector. Erring on the light side would bring about collapse of floors, should at any time floors, carried on such joists, be those of residential rooms turned into stock-rooms.

Discussion followed, and a vote of thanks was accorded to the lecturer.

The Association's annual luncheon followed, and in the afternoon, at the invitation of the Admiral Superintendent, members, delegates, representatives and ladies visited the dockyard.

On the third and final day of the conference members listened to two very instructive papers. The first was by Mr. C. H. Burwood, apparatus instructor to Messrs. Siebe, Gorman and Co., Ltd., London.

The second paper, "Fires in Houses Built of Concrete or Clinker Blocks," was read by Superintendent G. Parker (Hull), who said that during the past few months he had experienced two fires in houses built of concrete or clinker blocks. One was occupied, and the other used as a temporary stores on the building site. The first fire occurred in the early hours of the morning, and the occupants escaped by jumping out of the bedroom windows. The staircase was completely burnt away; all the furniture in the house was destroyed, along with the doors and windows, the fire having burnt through the roof. The fire had commenced under the staircase on the ground floor, near the gas meter; the ¾ inch gas pipe, having melted, allowed gas to escape, and assisted in the burning of the building. The second one occurred in the house used as a store-room, which was heavily stocked with finished joinery, consisting of parts of doors, windows, floor boards, etc. In both cases the heat inside the houses was terrific. To his great surprise, in each case, when examining the buildings after the fire, the walls were all intact, and showed no signs of cracking, except the plaster; the clinker blocks were all firm and in good condition and not one required replacing; but all the woodwork and contents of both houses were completely destroyed. There was no danger of the walls collapsing through distortion, as there was no iron used in the system in question except the ¼ inch steel rods which were embedded in the piers. Concrete was becoming increasingly recognised as the ideal material for fire resistant construction; from the composition of the material it was, of course, obvious that concrete itself could not burn, but this was not the only, or even the greatest, essential in fire-resistant construction, since, whatever the material of the building, there were usually combustible fittings or contents, and in grading the resistance of a building to fire one must consider its behaviour with regard to stability during the progress of a fire, when extinguishers and hydrants were employed in fighting it. The property of shelling or "spalling" during heating had been found to depend very largely upon the nature of the aggregate used in preparing concrete; and all materials containing quartz had been found particularly subject to this action. Flint was even worse in its "spalling" action, and granite, owing to its content of quartz, was unsuitable in this respect. Crushed fire-bricks were perhaps the ideal fire-resistant aggregate, but whinstone was also exceedingly good. All forms of concrete were markedly resistant to the passage of heat, and the conductivity was still further reduced when clinker was used as an aggregate in preparing building blocks. Blocks were not utilised to protect any structural steel, but formed partition walls in big buildings and outer walls in small houses. Finally, as regards the general problem of fire resistance, it must be clearly understood that there was no such thing as a fire-proof material; high temperatures injured in some way or other all materials used in construction at the present time; and the most that could be hoped was that a material might be made sufficiently resistant not to fail while still under full load during or subsequent to a fire. In his opinion, houses built of clinker blocks were as safe as houses could be; gas meters should not be allowed to be fixed under wood staircases, as this was the most dangerous part of a house to be on fire.

In reply to questions, the speaker said he did not advocate the use of coal dust, coke breeze, or cinder as an aggregate for concrete blocks. Boiler clinker was the best material to use.

One speaker gave it as his opinion that concrete blocks were really a war-time

substitute and that brickwork was again becoming more widely used, as formerly, for outer walls. Concrete blocks, he said, were now generally used for interior partitions.

A vote of thanks was accorded to the lecturer for his paper.

Invitations for the next Annual Meeting were next considered. The Governing Council have now to decide whether next year's Conference is to be held at Sheffield or in London. The Conference concluded with warm and hearty thanks to all concerned in the arrangements and success of the session.

In the afternoon many members, delegates and their ladies took advantage of the invitation of Messrs. Dennis Bros., Ltd., of Guildford, to participate in a motor tour to Hindhead.

The Exhibition.

An Exhibition was held in conjunction with the Conference in the Connaught Drill Hall in Stanhope-road, a capacious brick building erected from the designs of Mr. A. H. Bone about thirty years ago. No guide book was provided, but doubtless this omission will be remedied on a future occasion.

The central space was occupied by an interesting collection of various firms' motor engines, escapes, including one of the 85 feet extension turn-table type, on pneumatic tyres, which yet can be operated efficiently, if necessary, by one man; motor ambulances, with wonderful "float-in-air" beds and lavatory basin with water supply; and numerous fire appliances of divers shapes, forms and uses. A novelty was a twin-outlet nozzle, claimed to produce increased throwing power over the old type.

The sides of the building were lined with well-appointed stands with various displays, everything appertaining in some way to the fire service and its work, or the protection of life and property. Fire alarms, hose-pipes and pipe connections and repairers, and chemical extinguishers in many forms were placed for inspection. One electric hand-lamp successfully survived the test of being kicked across the hall, remaining alight and then spending the rest of the day in a bowl of water.

One manufacturer demonstrated his life-saving apparatus by using the gallery as a jumping-off platform. A Portsmouth firm were successful in exhibiting a paint that would not burn, as well as a solution in which articles could be dipped to make them non-inflammable. A heap of wood shavings and cotton wool prepared with this solution resisted the advances of blow-lamps, and a sheet of paper similarly treated gave equally good results.

Altogether, the Exhibition was a success, and provided the nucleus of even greater possibilities in the future.

FIRE, AND AN OPTION TO PURCHASE

SOME interesting points appear to have been raised in the recent case London Hole-proof Hosiery Co. *v.* Padmore, at present only reported in the *Times*, April 20. The plaintiffs, by an agreement dated August 20, 1925, had taken some land with a factory upon it with the machinery therein for a term of three years from August 1 at a rent of £60 a year. Under the agreement there was a covenant that the plaintiffs should keep the inside of the factory in good condition and repair at all times during the term, but there was no provision dealing with external repair nor with insurance. An option was given to the plaintiffs in the agreement to purchase on or before June 24, 1927, at a price of £1,600, on giving to the defendants six months' notice in writing and paying a deposit of £160 and paying all arrears of rent up to the date fixed for completion. In November, 1926, the factory was almost completely destroyed by fire. The factory had been insured by the defendant and the insurance had been paid to the defendant.

In December, 1926, some correspondence had passed between the parties, the defendant pointing out that the plaintiffs were still responsible for rent during the currency of the agreement, and also for the internal repairs, and the plaintiff admitting this liability but pointing out that nothing could be done in the matter of internal repair until the defendant had replaced the building. The defendant had replied on December 14 saying they were obtaining an estimate for the work required for external repairs.

On December 20 the plaintiffs gave the defendant notice that they intended to exercise the option of purchase, and they paid the deposit of £160, and in a covering letter said that it was necessary that the building should be placed in proper repair by the defendant at the earliest possible moment as the plaintiffs were acquiring the freehold when reinstated by the defendant. To this the defendant, on December 22, replied that the plaintiffs were under a misconception in suggesting the building should be placed in repair by the defendant. The plaintiffs in exercising the option took the property in its present state subject to and with the benefit of the tenancy agreement which contained no covenant on the defendant's part to repair. The above correspondence took place between the parties' solicitors.

Both parties maintained this attitude, and on March 2, 1927, the plaintiffs brought this action, claiming (1) damages for breach of contract, if any, and in the alternative a declaration that they were not bound to proceed with the purchase and an order for the return of the deposit. The defendant counterclaimed for a decree of specific performance of the contract. The Court below dismissed the plaintiffs' claim, holding that they were too late in seeking to repudiate the contract, which was one to take the premises in the condition they were in when the option was exercised, and gave judgment on the counterclaim for specific performance. The Court of Appeal reversed this judgment; holding that the option could only be exercised if there was no existing breach by the plaintiffs of the terms of the tenancy agreement, and under the covenant to keep the inside of the premises in repair before the option could be exercised they must put the premises in repair. This option involved a condition that they should have an opportunity of fulfilling their duty, but the defendant had refused to put them in such a position by declining to reinstate the outer walls and roof; thus the defendant's counterclaim failed, for owing to his attitude there was no option which could be exercised by the plaintiffs on December 20, 1926.

A further ground was mentioned which defeated the defendant's claim, viz., that the whole of the correspondence showed that when the plaintiffs purported to exercise the option on December 20 they were relying upon the defendant's previous statements that he was going to reinstate the building, and when this was repudiated by the letter of the defendant of December 22 the very basis of the exercise of the option was gone and the parties were never *ad idem*. It was suggested to the Court that the plaintiffs should, after the receipt of this letter, have then elected whether they would go on with the contract, but the Court pointed out that there could be no election when in fact, as stated above, there was no contract. Judgment was therefore entered for the return of the deposit. The unusual feature of the case is the exercise of the option after the premises had been destroyed by fire, and it may serve a useful purpose in showing tenants the pitfalls in the way of exercising an option, not exactly in the dark, but in the glow of a recent fire.

EMPIRE TIMBER

IN order to draw attention to the Empire Timbers Exhibition, a luncheon was given to some representative members of the R.I.B.A., leading builders, and others, on Wednesday, May 23, at the Imperial Institute. The exhibition, which opened on February 3 and closed on Wednesday last, has already achieved substantial results, and its effects are likely to become increasingly apparent as time goes on. Good business has already been done by a number of exhibitors, and many promising inquiries have been received.

Among those present were Sir William Furse, Sir Banister Fletcher, Sir John Simpson, Messrs. Walter Tapper, P.R.I.B.A., Walter Cave, J. Murray Easton, J. Emberton, H. S. Fairhurst, J. A. Gotch, L. M. Gotch, Percy Thomas, P. D. Hepworth, B. Ionides, W. T. Plume, H. V. Lanchester, H. Lidbetter, Ian McAlister, Major Holliday, Messrs. H. M. Robertson, H. D. Searles-Wood, Mr. G. C. Lawrence, and Mr. Rudolf Dircks.

In the course of a speech at the luncheon, Mr. Douglas Hacking, O.B.E., M.P., Parliamentary Secretary to the Department of Overseas Trade, said that there was a growing movement throughout the whole of Great Britain to use more and more the products of the Empire. The industries of the country utilised annually enormous quantities of structural and ornamental woods, and practically the whole of the supplies were imported. To a great extent, import of the required material was unavoidable, but a less satisfactory feature was the relatively low proportion of the import derived from Empire sources. The average value of the total imports of timber of all kinds into the United Kingdom during the past few years had amounted to about £46,000,000 per annum, only 10 per cent. of which represented timber of British origin. There might be some limit to the extent to which our needs in timber could be supplied from Empire sources, but it was a great deal higher than 10 per cent. The oversea countries had most important resources of both soft woods and hard woods.

The ultimate—perhaps the penultimate—reason why the Empire timber import was so small was that architects did not specify Empire woods in their professional practice. They were the final arbiters nearly always; they could recommend the woods to their clients and demand them from their timber merchants. In most cases they did not do so because the woods in question had not been brought objectively to their notice. There was good evidence of the practical value of this exhibition. Numerous inquiries had been received from many classes of timber users, and one of the best known firms of furniture manufacturers had decided to embark definitely on the manufacture of furniture from Empire woods and to hold an exhibition of their products before long. A letter from the Conservator of Forests in British Guiana stated that as the direct outcome of inspection of a special sample of greenheart wood in the exhibition, the Colony received an order for 10,000 cubic feet of greenheart, which was immediately followed by a second large order, and further business was expected.

The guests afterwards inspected the exhibition under the guidance of Lieutenant-General Sir William Furse, the director of the institute.

National War Memorial for New Zealand.

A scheme has been launched for the erection in Wellington of a national art gallery and museum, with a carillon of bells, a campanile, and a Hall of Memories, at a cost of £250,000. The whole will constitute a national war memorial.

LEGAL QUESTIONS WE HAVE BEEN ASKED

By W. T. CRESWELL, Barrister-at-Law, Associate (late Fellow) Surveyors' Institution, etc.

XXII.—WHAT ARE QUASI-EASEMENTS?

An easement is a quality attaching to land, and giving thereto something additional to the usual rights attaching to its ownership.

No man can hold an easement in his own property; nor, generally speaking, can he subject during limits of profession, one part of his property to another by an easement; but if he divides up that property, and one part of it is dependent on the other, a purchaser of one part takes it with all the qualities which the original owner had the right to attach to it. Such qualities are known as *quasi*-easements. They are rights analogous to easements, though strictly not easements at all. Nor is the term *quasi*-easement a strictly legal term. Its use generally relates to the accommodation given by one tenement to another, when both tenements are in one ownership, and when such accommodation would be an easement had the tenement over which the accommodation is held been in the ownership of another.

Apparent Accommodations.

Upon severance of two tenements, or part of a tenement, in one ownership, either on sale or lease, there will pass to the grantee all continuous accommodations which are apparent, and which are given by the part retained, to the part granted, for the reasonable enjoyment of the latter; also, all that are in the nature of *quasi*-easement as before referred to. These apparent accommodations include not only those which can be seen, but those which can be found out by a person ordinarily conversant with such matters when making an inspection. The word "apparent" means "apparent on the premises granted." (See Schwann v. Cotton, 1916, 2 Ch. 459 C.A.)

In Browne v. Flower (1911), the Ch. at page 225, Parker, J., gave what is said to be the modern rule governing this question. The plaintiffs in the action had, among other things, relied on the maxim that no one can be allowed to derogate from his own grant; and the Judge said: "This maxim is generally quoted in explaining certain implications which may arise from the fact that, in the circumstances under which an owner of land grants or demises part of it, retaining the remainder in his own hands, the real difficulty is in each case to ascertain how far such implications extend. It is well settled that such a grant or demise will (unless there be something in the terms of the grant or demise or in the circumstances of the particular case rebutting the implication) impliedly confer on the grantee or lessee, as appurtenant to the land granted or demised to him, easements over the land retained, corresponding to the continuous or apparent *quasi*-easement enjoyed at the time of the grant or demise by the property granted or demised over the property retained."

Application of the Rule to a Lease, etc.

The above rule applies not only on a grant by sale or by lease, but also where, in the case of two tenements, both tenements are in one lease, when it will take effect on the termination of the lease. Also, too, when both tenements are in one mortgage and the mortgagee sells the tenement possessing the dominant right of accommodation over the other, retaining the latter; and, again, the rights remain where both tenements are conveyed simultaneously; also, as on a disposition by will.

In Schwann v. Cotton, 1916, 2 Ch. 459 C.A., Blackacre, owned by the testator of a will, was supplied with water by an underground pipe from a well at Greenacre, through Whitacre, which was also owned by him. The testator devised Blackacre and Whitacre, with their appurtenances, to different persons. It was held that Blackacre was devised with the right of passage of such water as might flow through the pipe; and that the devise of Whitacre was subject to that right

See also Westwood v. Heywood (1921), 2 Ch. 130, where a former owner of two farms laid a pipe conveying water from the *quasi*-servient tenement to the other *quasi*-dominant tenement. Later the then common owner let them separately, but the agreements did not mention water rights. It was held that the water right passed by implication and involved an implied reservation in the letting agreement of the *quasi*-servient tenement.

Quasi-Easements Arise by Implication of Law.

The *quasi*-easements above referred to arise by Implication of Law, and by what is known as "implied grant" or "implied reservation," both of which are incidents of "express grant." Without these *quasi*-easements of necessity, enjoyment of the property granted would be impossible. Instances are easements of light, as when A sells B a house with windows overlooking A's ground adjoining, or easements of support, as where two contiguous buildings have been built simultaneously, so as to derive support from each other, and one is sold. Also the easement of a way, as when A has an enclosure in which are two houses, and a way passes from one to the other, which is convenient for the enjoyment of the two portions of his tenement. If A sells one portion to B, the latter has an easement of convenience to use the way; or, again, A is the owner of a pair of houses. A gutter runs along the eaves of both houses, which carries off the rain-water of the pair of houses. A sells one of them to B, and the other to C. C cannot restrain B from letting the water pass along the gutter during unity of possession by A. It is a continuous and apparent convenience required by the disposition of the houses.

In all cases the contract between the parties must be examined in order to ascertain therefrom the interest of the parties to the severance. The Court will always imply these *quasi*-easements as may be necessary to give effect to the common intentions of the parties to the grant.

In Simpson v. Weber (1925), 133 L.T. 46, two adjoining houses, originally belonging to one person, became vested in the plaintiff and defendant respectively. A creeper growing in the defendant's garden spread its foliage along the plaintiff's house into a gutter, also the post of a gate leading from the defendant's garden had been fastened on to the plaintiff's wall. In an action for trespass it was held that both these facts would amount to trespass unless they could be justified by the existence of an easement. Here there was an easement implied by implied reservation, as there was no evidence that it was not the common intention of the parties to the conveyance that the creeper and gatepost should remain—therefore in each case an easement was impliedly reserved.

British Architects' Conference, Bath, 1928.

The Annual Conference of the R.I.B.A. and Allied Societies will take place in Bath from June 20 to June 23, inclusive, at the invitation of the Wessex Society of Architects. All members of the R.I.B.A., the Architectural Association, and the Allied Societies in Great Britain, Ireland and overseas are invited to take part in the Conference. It is hoped that many ladies will be present as guests of members at all the events contained in the programme. A programme (given in short in our issue for May 18) containing full particulars can be obtained on application to the Secretary, R.I.B.A., 9, Conduit-street, W.1.

WEEK IN PARLIAMENT

WESTMINSTER, *Wednesday.*

Unsightly Petrol Pumps.

When the House of Lords considered the Petroleum (Amendment) Bill in Committee last week, there was much discussion on Clause 5. This clause empowers county and borough councils to make by-laws "for the purpose of preserving the amenities of any rural scenery or place of beauty or historic interest for the enjoyment of the public," regulating the design and appearance, and prohibiting the establishment of the petrol filling stations. As a result of a number of amendments moved, the Government agreed to include urban councils among the by-law-making authorities, and also to allow by-laws to be made with regard to the colour of the pumps. The Government also promised to consider the extension of the scope of the clause to towns and villages and the shortening of the period of grace allowed to existing structures from two years to one year.

Lambeth Bridge.

In the House of Lords, Lord Monk Bretton called attention to the powers to rebuild Lambeth Bridge conferred on the London County Council by the London County Council (Lambeth Bridge) Act, 1924, and to the proposals of the Council to adopt a design differing in certain respects from that placed before the Select Committee, which considered the Bill for that Act. He said that the London County Council (Lambeth Bridge) Act, 1924, passed through the procedure that applied to Private Bill legislation in both Houses of Parliament. It might be said that the policy of a new bridge at Lambeth was fully considered and approved at that time. Moreover, in the private Bill no restrictions were placed on the architectural features of the bridge. It was the case, nevertheless, that when the Bill was before the Select Committee of that House, the design of the bridge was shown. It was a design that had been made in collaboration with Sir Reginald Blomfield, and it showed a bridge of five steel arches, faced with granite and taking an elliptical form. The Bill passed through all its stages in both Houses and became law, and it was only when the engineer had to provide the detailed drawings for the actual construction that it was found that the granite facings were unsuitable to modern traffic conditions in connection with these elliptical arches. There were also other disadvantages concerning the navigation of the river, and, as a result, a bridge with a new design was worked out which gave more satisfaction as regards its suitability both for navigation and for the traffic that had to be carried, and as to its wearing capacity. The new design provided unfaced steel arches, the spans were wider, and its weight was diminished. There was nothing in this Act which did not allow the London County Council to proceed with its building operations, but it was felt by them that as the Select Committee presided over by Lord Bath had a different design before it, it was desirable that this matter should be called attention to in Parliament, in order that it should be realised that the design which the Council proposed to build on was not the design laid before the Committee. The London County Council were satisfied that the new design, on the grounds of traffic, of navigation and of outward appearance, was a better design.

The Earl of Donoughmore moved: "That a Select Committee be appointed to consider the proposals of the London County Council to adopt a design for rebuilding Lambeth Bridge which differs in certain respects from that placed before a Select Committee of this House in 1924, and to report to the House thereon." He said that the only question was that the London County Council wanted to alter the appearance of the bridge to the eye. All the other conditions laid upon them by Parliament would be obeyed. The most convenient course would be that the first picture of the bridge, together with the new picture, should be submitted to the Com-

mittee, so that they would have the two pictures alongside each other, and they could then make what report they thought right. In view of the importance of the question, he suggested seven peers, and there was a date in the middle or end of June on which the Committee could meet. One meeting of the Committee would be sufficient to finish the whole thing.

The Earl of Plymouth said that the new proposals met the views of the Ministry of Transport, so far as traffic considerations were concerned.

The resolution was carried, and the following members were appointed as the Select Committee :—The Archbishop of Canterbury, the Marquis of Bath, Viscount Burnham, Viscount Ullswater, Lord Desart, Lord Southwark, and Lord Olivier.

The Foundling Estates.

Sir J. Remnant asked the Minister of Health whether he was aware that the Foundling Estates, Ltd., had submitted plans for building on the site of the Foundling Hospital, including a new road which would encroach on the Mecklenburgh and Brunswick Garden-squares; that the proposed road would cut through the garden enclosures of Caroline-place and Lansdowne-place; and that buildings on the north frontage of Guilford-street would involve the removal of large portions of these two garden enclosures; would he say when he proposed to resume the public inquiry into the London County Council Holborn and St. Pancras town-planning scheme, adjourned on February 3, 1928; and would he exercise his powers to restrain the proposed encroachment upon the garden squares and the destruction of garden enclosures?

Mr. Chamberlain said he had not details of the submitted plans, but the approval of plans for building on the site of the Foundling Hospital rested with the London County Council, and he had no power to prohibit the approval. He had communicated with the London County Council on the town planning proposals, and the resumption of the inquiry depended on whether the Council decided to proceed with the town planning scheme so far as it applied to the site of the Hospital.

The Reconditioning of Houses.

Sir Walter de Frece asked the Minister of Health what steps were taken by local authorities to call the attention of owners of houses needing reconditioning to the state of their property; and whether he would consider the desirability of increased publicity in respect of the ownership of houses where the provision of sanitary and habitable accommodation was not adequate?

Mr. Chamberlain said it was the duty of a local authority under the Housing and Public Health Acts to make provision for a thorough inspection to be carried out from time to time according to the circumstances of the dwellings of their district and to take appropriate action. In the last year for which statistics were available, 1,164,875 houses were inspected under these provisions, and works of reconditioning or repair were carried out during the year for nearly 600,000 houses, and in the case of more than half this number the necessary works were carried out as a result of co-operation between local authorities and the owners, and without the need for the issue of statutory notices. In those circumstances, he did not think there would be any sufficient advantage in adopting the suggestion made.

London University Athletic Appeal.

We have received details of a scheme for the provision of a boat-house and playing-fields for London University. The amount aimed at for building and equipment is £44,000, which, with an endowment fund of £30,000, makes a grand total of £74,000. Cheques, payable to the "University of London Athletic Appeal Fund," may be sent to the Financial Officer, University of London, S.W.7.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

***May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting?*—ED.**

Damp Floor.

SIR,—Can any reader inform me of a cure for damp rising to lino laid on a quarry floor?

F. PALMER.

Plaster Question.

SIR,—I should be glad to know what are the advantages of using Sirapite as compared with ordinary plaster finish, and with a Keene's cement finish, and also some idea of the comparative costs.

STUDENT.

Distempering Fresh Plaster.

SIR,—If any of your readers know of a brand of distemper that can be relied upon to stand well on fresh lime plastering, without damage from efflorescence, I shall be obliged if they will share their experience with me.

NEW BUILDING.

Breeze Blocks.

SIR,—I have recently met a case where breeze blocks have actually blown holes out of the plastering, due, I am told, to the presence of coal in the breeze. Is there any sure way of testing for this defect before use?

ALARMED.

Specification Clauses.

[REPLY TO "INQUIRER," MAY 18.]

SIR,—The first two clauses quoted are very usual ones and should not unduly alarm the estimator; but the third is absurd and impossible. If your correspondent is tendering on this specification he should cover his tender with an express repudiation of this clause.

ARCHITECT.

"Facts and Fallacies of Cement."

SIR,—In your issue of May 25, a correspondent, Mr. C. A. Longley, offers some advice concerning the treatment of the lime set free during the hydration of cement. If your correspondent will kindly afford a little more information on how to prepare "colloidal cement," and also if he can give approximately the percentage of cement so used which can be turned into a jelly, and how this last can be determined, I shall be obliged.

ALFRED H. G. BERRY.

Responsibility for Laying Sewer.

SIR,—In a case where the owner of land has made a new road, along which houses are being built, who has to lay the sewer to receive the drains of the houses, the owner or the Urban District Council?

P. J. THOMAS & SON.

Payments on Account.

Sir,—In regard to jobbing works where there is no formal contract but merely a letter giving the price and a form of acceptance, we make it a condition of the estimate that payments on account shall be made during the course of the work. We are rather uncertain as to the proper line to adopt when difficulty is experienced in obtaining such payments. Would it be in order for us to suspend the work, or if not, what steps are open to us which would not bring us up against the difficulty of non-performance of contract? NORTH LONDON BUILDERS.

Neighbour's Rainwater.

[REPLY TO "BUILDERS," MAY 25.]

SIR,—If the neighbour in question is a keen gardener, I should prescribe a good rainwater butt at least, or an ample storage tank for preference, and with either, a grateful spirit for the fate that has diverted a double quantity of a precious liquid for the benefit of one's garden.

LIVE AND LET LIVE.

Cubic Contents of Bulk Materials.

[REPLY TO "INTERESTED," MAY 25.]

SIR,—It should be possible to resolve the plan of the stack into some geometrical form, such as a parallelogram, of width the average of the stack, and of length the same. The cubic contents then becomes one-third of the height by the area of the base, viz., length by width of the resolved parallelogram.

AVERAGE.

Condensation on Plaster.

[REPLY TO MR. ARTHUR KEEN, MAY 25.]

SIR,—Papering with a good-quality matt paper, of thick substance, has the effect of checking the accumulation and diffusing the effect of collected condensation. In certain atmospheric conditions, condensation is inevitable on any cold, non-absorbent surface, and the aim must be to arrive at a surface that does not readily lose heat, and which has some degree of absorbent properties. A good, thick paper, one that is fast in colour, answers to these requirements as well as any.

ARCHITECT.

Building Contract.

SIR,—Is it correct, as I have been told, that if a building contract is entered into, in which it is stated that the architect's decision is final and binding upon both parties to the contract, and not allowing provision for arbitration under any circumstances, neither party has any appeal against the decision of the architect?

PARTY.

Septic Tank : Underpinning.

SIR,—I should appreciate information on the following matters :—

(1) The construction of a septic tank for a small country-house lavatory.

(2) Underpinning a brick-built bungalow, built on Essex clay. The house shows signs of sagging. Can door-frames and window-sashes (casement) be restored to the "square" if they are distorted through the sagging of the foundations? For underpinning, is concrete alone sufficient, or should there be some bond between the existing brick foundation or footings and the under pinning structure?

BUILDER.

Bunyan's "House Beautiful."

An appeal has been issued for £1,000 to save and preserve to the nation what remains of Houghton House, Ampthill, near Bedford, which is said to be the original of the "House Beautiful" of Bunyan's "Pilgrim's Progress." The actual cost of purchasing the ruins is £350, and to render them safe and to remove the ivy and ingrowing trees will absorb the remainder. Donations may be sent to the secretary of the Bedford Arts Club, Mr. H. Fryer Smith, 29, Warwick-avenue, Bedford.

Manchester Technical Courses.

We have received the prospectus of the summer evening classes for short courses of lectures and laboratory work at the Manchester College of Technology. The college —which is under the direction of the Principal, Mr. B. Mouat Jones, M.A.—is commencing the classes on June 11 and 12. They will continue until July 24. A summary of classes and fees is given in the prospectus, obtainable from the secretary, but of special interest to the architectural profession and building trade are those on mechanical engineering, electrical engineering, municipal and sanitary engineering, building, and industrial administration.

THE BUILDING TRADE

EVERYDAY SCIENCE FOR ARCHITECTS AND BUILDERS—XXI

By A. M. GILES, B.Sc., A.I.Struct.E., A.M.I.E.E.
Diagrams and Illustrations by M. R. Dumville.

Glare.

THE dazzling brightness of a motor-car headlight, or of an unscreened electric lamp, or even of a lamp that has been surrounded by an opal shade, is termed "glare." It is really the intensity of the brightness of the light. This does not depend alone upon its candle power, but also upon the c.p. per square inch of luminous surface. For example, the illuminating power of a clear glass electric lamp may be 32 c.p., but its intensity of brightness or its glare will be something quite different, for suppose the area of its luminous filament to be a quarter of a square inch, then its glare would be 32 divided by ¼, which is 128 c.p.

The glare of a lamp is sometimes reduced by surrounding it with a spherical opal shade, yet a case was heard of recently where complaints were made of the glare of the light from an opal bulb of 10 in. diameter. The measured glare from the bulb was 2¾ c.p. per square inch. To reduce this the 10-in. bulb was replaced by one of 14 in. diameter, which brought the glare down by 50 per cent. This can be easily understood if it be remembered that the surface area of a spherical bulb is four times the square of its radius multiplied by π (3¼). The surface area of a 10-in. bulb = 100 π sq. in., while that of a 14-in. bulb = 196 π sq. in. The surface area of the 14-in. bulb is then approximately twice that of the 10-in. one, and therefore the glare of the larger bulb would be approximately half that of the smaller. A further complaint was then made that, although the glare had been reduced, the larger bulb was not in keeping with its surroundings from an æsthetic point of view. It would seem that another way of reducing the glare of the 10-in. bulb would have been to use inside it a lamp of a lower candle power. Naturally this would have reduced the total candle power employed.

Although glare at all times should be avoided, it is nevertheless important that the correct intensity of illumination should be obtained wherever wanted, *e.g.*, in a bedroom we are told that ¼ F.C. (foot-candle) will be sufficient, whereas for a classroom or the desk in a drawing office 3 F.C. are necessary, and a watchmaker will want at least 12 F.C. Something may now be said about natural or daylight illumination.

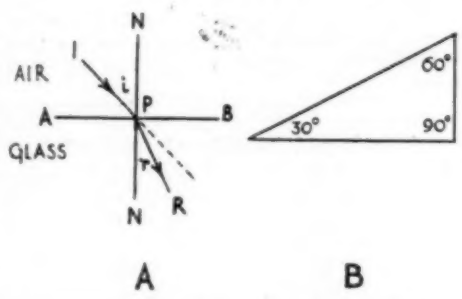
Ancient Lights.

This well-worn expression has been the subject of much argument and discussion, as well as litigation, and to Mr. Percy J. Waldram and his son must be given the credit of supplying us with a heap of valuable information about it.

It is almost impossible to think of anything that varies as much, or as quickly, as the intensity of daylight illumination. This being so, it has been necessary to adopt some standard of sky brightness so that the intensity of illumination at any point in a room due to the daylight that passes in through a window or opening may be stated as having such and such a value. For the sake of uniformity the standard of sky brightness has been taken as that which prevails on a moderately dull day in summer during a gentle shower of rain. The standard enunciated by the authorities of the National Physical Laboratory is that which produces an intensity of illumination of 500 F.C. on a white card placed horizontally on a roof, or some very high building, so that the light from a complete hemisphere of the sky can fall upon it without obstruction. It will help us to appreciate this intensity of illumination if we think of it as the same illumination as the card would have were it placed at a distance of 1 ft. from a 500 candle power lamp.

That the unobstructed light from the sky has a great brightness is very evidently manifested by the numerous daylight illuminated signs that are becoming so prevalent. If the card were placed on a window sill so that the unobstructed light from a half of the sky hemisphere could fall upon it, then, theoretically, its intensity of brightness would be 250 F.C. This condition, however, seldom obtains, owing to obstructions from trees and neighbouring houses. In the case of a building which is to be erected near the windows of a house, the very much argued and discussed 45 deg. rule comes into operation. The interpretations of this rule are very numerous, and one may be forgiven, perhaps, for stating an elementary view of it. If a straight line be drawn from the sill of the lowest window of a building to the top of the neighbouring building, then the angle between this line and the vertical face of the former building must not be less than 45 degrees. This would mean that the unobstructed light from at least a quarter of the sky hemisphere would reach the window, provided there were no

FIG. 62.



obstructions on either side of it. The percentage of outside daylight that passes into a room through a window is really very small, and some authorities have attempted to describe the illumination at any point in a room as a *daylight ratio*. It is simply the ratio of the intensity of illumination of a white card when placed at any point in a room to its intensity of illumination when placed outside on the sill of the window.

This really seems only another way of defining *sill-ratio*, for suppose the ratio at a table in a room were 1 per cent., this would mean an intensity of illumination at the table of 2½ F.C., provided the window sill were exposed to a complete half-hemisphere of sky. The 0.4 per cent. sill-ratio, that one hears so much about, would give an intensity of illumination of 1 F.C. at the table.

Vita-glass.

So much has been said and written recently about ultra-violet rays, and it is becoming the custom in specifications for there to be a clause demanding the use of vita-glass for glazing some of the windows of a building, that this seems a fitting opportunity for saying a word or two about it.

Among the rays of heat and light that come to us from the sun, there is a band known as the ultra-violet rays. Doctors tell us that these rays have certain health-giving properties, and that, whenever and wherever possible, we should avail ourselves of them. Common window glass does not allow ultra-violet rays to pass through it, whereas the specially prepared glass, called vita-glass, has the additional property of permitting the passage through it of at least 75 per cent. of these rays as well as ordinary light rays. It is known that the monkey-house at the Zoo has been glazed with vita-glass, and that much benefit to the occupants has ensued; therefore, as apparently what is good for monkeys is good for us, many of our windows are being provided with vita-glass. Townspeople, even out of doors, suffer from a deficiency of these rays, many of which are absorbed by the smoke-laden atmosphere during their passage from the sun to the earth.

Refraction of Light.

Our next object is to discuss the *law of refraction* of light. It has been said that "light travels in straight lines," but this should have been amplified by the phrase "in a homogeneous medium," such as air, water, or glass.

When light passes from one medium to another, such as from air to water, or air to glass, or the reverse, it does not continue along the same straight line unless it passes along the normal to the surface of separation of the two media. In other cases it becomes bent or refracted at the surface of separation, either towards the normal or away from the normal. This depends upon whether it passes to an optically denser or less dense (rarer) medium.

The angle between the incident ray and the normal is called the angle of incidence, and the angle between the refracted ray and the normal is called the angle of refraction. Fig. 62 *A* will help to make these terms clear. *A B* is the line of separation of two homogeneous media, say, air and glass. *N P N* is the normal to the line or surface of separation. *I P* represents an incident ray, and the angle between this and the normal, marked "i," is called the angle of incidence. *P R* represents the refracted ray, and the angle between it and the normal, marked "r," is called the angle of refraction. It will be noticed that the illustration shows the refracted ray *P R* bent towards the normal upon entering the glass, and that the angle of refraction "r" is less than the angle of incidence "i." This will always be the case when light passes from one medium to a denser medium. Glass and water are both denser than air, therefore, whenever light passes from air to glass or water it will be bent towards the normal. Naturally, if we reverse the direction of the light (such as light coming from a stone lying at the bottom of a pool of water, to your eye which is in the air), it will be bent away from the normal as it passes from either glass or water to the air.

There is a definite law of refraction of light, viz.: "For the same two media the sine of the angle of incidence bears a constant ratio to the sine of the angle of refraction." At first sight this law may be difficult to understand, but by a very simple explanation of the meaning of the "sine of an angle" it should become easy. The consideration of Fig. 62 *B* will help. In every right-angled triangle the side opposite to the right angle is called the "hypotenuse," the side opposite to the angle under consideration is called the "opposite" side, and the remaining side is called the "adjacent" side. The sine of the angle under consideration is the ratio of the length of the opposite side to that of the hypotenuse.

E.g.—

Sine of angle A = sine of angle 30 deg.
$$= \frac{BC}{AC} = \frac{\text{opposite side}}{\text{hypotenuse}}$$
Sine of angle C = sine of angle 60 deg.
$$= \frac{AB}{AC} = \frac{\text{opposite side}}{\text{hypotenuse}}$$

Sanatorium for Consumptives, Ventnor.

The governors of the Royal National Hospital for Consumption, whose registered offices are at 18, Buckingham-street, W.C.2, are considering the building of a sanatorium on a six-acre site, costing £50,000. The hospital's architect is Mr. J. W. Stanley Burmester, F.R.I.B.A., 13, Queen Anne's-gate, S.W.1.

VALUATIONS UNDER THE RATING AND VALUATION ACT, 1925.—IV

HEREDITAMENTS UNDER SCHEDULE II, PART II.

In our last article we referred to hereditaments other than those contained in Part I of the Second Schedule the net annual value of which has to be determined under section 22, subsection (1) (*b*), which will also be the rateable value unless the hereditament belongs to one of the classes specified in the first column of Part II of the Second Schedule, in which case the rateable value is arrived at by making the deductions mentioned in the second column of the said part of the Schedule, and we set out the effect of this part of the Schedule. The deduction to be made in the case of the third class of hereditaments there set out is: (*a*) if the land is situate in a county borough or urban district in which a consolidation of rates takes effect by virtue of this Act "subject to the provisions of Part III of this schedule such percentage of the net annual value as corresponds with the average relief from rating to which in the part of the rating area in which the land is situate, occupiers of that class of hereditaments were entitled, otherwise than under any temporary Act between April 1, 1914, and March 31, 1924"; (*b*) But if the land is situate in any other county borough or urban district being a borough or district in which a consolidation of rates was authorised by a local Act passed before the commencement of this Act, then "such percentage of the net annual value as corresponds with the percentage of the relief from rating given by the local Act."

As we stated in our last article, as one consolidated "general rate" is to be levied the relief must be equated as between what was the poor rate and the district rate in urban districts. An example was given in the Memorandum issued with the Bill which still applies:—If the rates levied in the ten years ending March 31, 1924, came to 850 pence of poor rate and 680 of general district rate a property entitled before this Act to 75 per cent. relief in the general district rate but to no relief in the poor rate would in the new consolidated Act rate be entitled to a relief of 33⅓ per cent. Thus—relief obtained in the past $\frac{3}{4}$ of 680 = 510 pence, on a total rating of (850 + 680 pence) 1,530 pence

$$1{,}530 = \frac{1}{3} \text{ or } 33\tfrac{1}{3} \text{ per cent.}$$

Part III of the Second Schedule referred to above, for the purpose of determining the amount of the deductions to be allowed in respect of the hereditaments belonging to Class 3 (*a*) requires the rating authority of every county borough or urban district before the appointed day to submit a scheme to the Minister with respect to the deductions existing in the period specified (April 1, 1914, to March 31, 1924) and the deductions to be allowed, but where differential rating provisions, not of a permanent character, were in operation in that period, or where the county borough or urban district was created or extended at some time between the said dates, the scheme shall be a special scheme with such modifications as the circumstances of the case may require. It also provides that where the average relief from rating was not the same in all parts of the area, the scheme or special scheme may make provision on such basis as appears equitable for a uniform percentage of reduction throughout the area.

It will be seen that these provisions only apply to the case of 3 (*a*), for under 3 (*b*) where the percentage of relief or deduction has already been effected by local Act that percentage is to be adopted.

Special Rates.

In our first article we referred to the "special rate" which is to take the place of the present rate under the Lighting and Watching Act, 1833, and any rate in respect of special expenses under the Acts relating to public health and which, as from the appointed day, the rating authority of each rural area shall make and levy in each part of their area which is liable to be separately rated in respect of the same (see section 3, subsection (1)), but it is provided that where the amount of any such expenditure or of any such expenses for any half year is less than £10 or is so small that a general rate of less than one penny in the pound would be sufficient to produce the amount of the expenditure or the special expenses, then the amount may be levied in that part of the area together with, and as an additional item of, the general rate. The half year in this subsection means the period of six months expiring March 31, or September 30. Subsection (2) provides that subject to the express provisions contained in the Act as to special rates all the provisions of the Act relating to the general rate shall apply to a special rate, except that the owner of any tithe or tithe rent charge and the occupier of any woodlands or of any land covered with water or used as a canal or a towing-path to a canal or as a railway constructed under the powers of any Act of Parliament for public conveyance, and until the date of the first new valuation the occupier of any agricultural land, shall be liable to pay in respect of one-fourth part only of the rateable value.

Land Covered with Water.

There is a note on the subject of land covered with water in the second series of the representations by the Central Valuation Committee. After referring to section 22, subsection (1) (*c*), and Part II of the Second Schedule, which prescribes the deductions to be made from the net annual value, and to section 3, subsection (2), which we have just cited above, and alluding to doubts which have been expressed as to the method of dealing with such land where it is comprised in a larger hereditament, as in the case of mill-races, goits, and reservoirs, it was recommended that in such cases the land covered with water should be regarded as a separate hereditament and be entered in the valuation list as a separate item, unless such land was of no appreciable value or extent. In the Memorandum of the Rating Surveyors' Association, objection is taken to this recommendation.

Industrial Premises.

It is curious that under the Act there is some obscurity as to the provisions under which mills, manufactories or premises of a similar character, used wholly or mainly for industrial purposes, that is to say, those hereditaments expressly excepted from Part I of the Second Schedule, are to be valued, but apparently they fall under section 22, subsection (1) (*b*), that is to say, the rent has to be estimated at which the hereditament might reasonably be expected to let from year to year if the tenant undertook to pay all usual tenant's rates and taxes and to bear the cost of the repairs and insurance and the other expenses (if any) necessary to maintain the hereditament in a state to command that rent, and the annual rent so ascertained will be the net annual value, and as no deduction is provided in the Second Schedule, Part II, except in the case of land used as a railway constructed under the powers of any Act for public conveyance, the net annual value so ascertained will also be the rateable value (see section 22, subsection (1) (*c*)).

The Memorandum of the Rating Surveyors' Association draws particular attention to this question, as it states that there are many classes of hereditaments which do not fall within Part I of the Second Schedule, nor the exceptions specified in the note thereto, and that considerable difficulty is being experienced in determining in what class certain properties should be placed, and the Association considers that an immediate amendment of Part I of the Schedule is called for.

Hereditaments containing Machinery.

Section 24 deals with hereditaments containing machinery, and although the Act is far simpler than the original Bill, it gets over the difficulty experienced since the decision of the House of Lords in Kirby *v.* Hunslet Union Assessment Committee (1906, A.C. 43) as to taking into account tenant's machinery, and adopts one of the suggestions of the Inter-Departmental Committee on Rating Machinery, that it should be made clear that all machinery and plant to be taken into account is to be deemed part of the hereditament, for section 24 provides that for the purpose of making and revising valuation lists under this Part of the Act, with respect to the valuation of any hereditament other than a hereditament the value of which is ascertained by reference to the accounts, receipts, or profits of the undertaking carried on therein (*a*) all such plant or machinery in or on the hereditament as belongs to any of the classes specified in the Third Schedule shall be deemed to be a part of the hereditament, and (*b*) subject as aforesaid, no account shall be taken of the value of any plant or machinery in or on the hereditament. Schedule III is drawn in very general terms, but the matter does not rest there, for it is provided in subsection (3) that for the purpose of enabling persons to have precise information as to what machinery falls within that Schedule, a Committee shall be formed to prepare a statement setting out in detail the machinery and plant included. By subsection (5) the Minister may, with or without modification, confirm that statement by order, and the order, after being laid before both Houses of Parliament, and unless either House presents an Address to His Majesty against it or any part of it, will take effect as substituted for the Third Schedule. But if an Address is presented, a new order may be made. By subsection (6) those orders are to be subject to revision. By subsection (7) a panel of referees is to be constituted, as laid down in subsection (8), and if on or in connection with any objection or proposal made, or appeal brought under this part of the Act, a question is raised whether any particular plant or machinery falls within the classes of the order, that question may, with the consent of the parties, be referred by the assessment committee or court, as the case may be, to an agreed member of the panel, or, in default of agreement, to a member selected in accordance with rules made under the section.

By subsection (2), it may be noted, the rating authority or assessment committee, if required by the occupier, has to furnish particulars showing what machinery has been treated in pursuance of this section, as forming part of the hereditament, and it appears this would be a subject of objection under section 26, and of an appeal under section 31.

It is important to note that under subsection (10) of section 24 nothing in the section shall affect the law or practice with regard to the valuation of hereditaments the value of which is ascertained by reference to the accounts, receipts, or profits of an undertaking carried on therein, nor to be taken to extend the class of property which is under the law and practice in force at the commencement of this Act deemed to be provided by the occupier and to form part of his capital.

Great Exhibition Building at Earl's Court.

It is probable that in 1931 the London section of the British Industries Fair will be housed in a new building at Earl's Court, which will not only be larger than any of its kind in the Metropolitan area, but one of the finest permanent structures for the purposes of exhibitions in the world. The scheme for the erection of the hall is the project of the Underground Railway Company, say the "Times," who have an interest in the grounds of the old Earl's Court Exhibition. The site, both in extent and accessibility, is regarded as particularly adapted for the special purpose of exhibitions and trade shows, and the company have announced that they were considering the erection of a large building suitable for the use of exhibitions, fairs, and other functions of a similar nature. Plans are not yet completed, but the building will probably be ready within the next two years.

RATING AND VALUATION ACT, 1925, AND RURAL PROPERTIES

LECTURING on this subject before the Auctioneers' and Estate Agents' Institute of the United Kingdom on Friday, May 18, Mr. A. M. Trustram Eve, barrister-at-law, said since he was invited to read a paper Mr. Winston Churchill had made his Budget speech, and in it had promised complete relief from rates for agricultural land and buildings. The subject matter of this paper had, therefore, lost some of its importance, though, since the relief is only to date from the latter part of 1929, both occupiers of agricultural land and their advisers would have to make themselves familiar with the provisions of the Act. The Act, with its seventy sections, eight Schedules and numerous Orders by the Minister of Health, embraced a vast subject, and one which, even when limited to rural properties, could not be dealt with in the space of a short paper. He therefore proposed to confine himself to a few of the more important provisions which might affect an estate agent and surveyor who was called upon to advise an owner or occupier of rural property.

It was essential to remember that a mere reading of the Act was by no means sufficient to enable a practitioner adequately to advise his client. To give only a few examples. The third Schedule to the Act had already been struck out of the Act, and there had been substituted therefor an Order by the Minister of Health enacting what machinery and plant were to be deemed to be part of a rateable hereditament. Again, by the Rating and Valuation Act, 1928, which had just been passed, certain of the statutable deductions fixed by the Second Schedule of the Act, Part I., had been amended. Under section 58 of the Act the Minister of Health was enabled by rules to prescribe anything which by the Act had to be prescribed, and the form of any documents required for the purpose of the Act. Under this power the Minister had issued a very great number both of Orders and of Memoranda, some of which were of the greatest importance, dealing as they did with most important points relating to procedure. Under section 67 of the Act the Minister again was given power "if any difficulty arises in connection with the application of this Act to any exceptional area, or the preparation of the first valuation list for any area, or otherwise in bringing into operation any of the provisions of this Act," by Order to remove the difficulty; and furthermore he might by such Order "modify the provisions of this Act so far as may appear to the Minister necessary or expedient for carrying the Order into effect." It would be seen that under this power the Minister could, if he so wished, actually modify the Act. Lastly, under section 69 of the Act the various rating statutes which were to be repealed were to be repealed upon such date as the Minister might decide, and the Minister might fix different dates for different purposes in relation to different areas. These alterations, he thought, showed the absolute necessity of possessing a completely up-to-date textbook upon the Act and the Orders made thereunder.

The lecturer proceeded to discuss the assessment of a few typical rural hereditaments, taking as his examples small holdings and allotments, farm labourers' cottages, woodlands, sporting rights, gravel pits, sports grounds, tithe and farms.

Small Holdings and Allotments.—These come within Class 8 of Part I. of the Second Schedule, and therefore required a gross and were given 5 per cent. statutables. It was important, however, to remember the provisions of s. 22 (1) (*d*) which enacted that fractions of less than 10s. were to be ignored. This had the effect for agricultural land of releasing from rating all hereditaments with a gross value of less than 42s. The convenient practice, therefore, of grouping together a number of allotments into one hereditament in a valuation list and rating the owner would now have to cease.

Farm Cottages.—These came within classes 1, 2 or 3 of Part I. of the Second Schedule and were entitled to the statutables which had been substituted for those in the Second Schedule of the Act of 1925 by the new Act of 1928. These cottages, by virtue of s. 5 of the Agricultural Rates Act, 1896, must be rated "not on structural cost, but on the rent at which they would be expected to let to a tenant from year to year, if they could only be so used . . . for the cultivation of the said land"; in other words, the gross value was the rent which a farm labourer would pay for his occupation of the cottage.

Woodlands.—A difficult question under the Second Schedule of the Act was as to the meaning of the word "land." There was a definition of land in the Interpretation Act, 1889, and also a different definition founded upon case law under the Poor Relief Act, 1601. The Central Valuation Committee had advised, and he suggested that until the Courts had decided the point, their advice should be followed, that it was the definition of "land" under the Poor Relief Act of 1601, which should be followed in construing the Second Schedule. In that Act as saleable underwoods were contrasted with lands it had been held that woodlands of all sorts did not come within the expression "land." That being so, woodlands should be rated without a gross, and the special provisions of the Rating Act, 1874, still being in force, the assessment should still be upon "prairie value."

Sporting Rights.—This was a difficult question, and one upon which the Central Valuation Committee and the Rating Surveyors' Association had formed different opinions. The recommendations on both sides could not be discussed within the space of a paper such as that, but his view was that unless sporting rights were both severed from the occupation of the land and let they should not be treated as a separate hereditament, and that where the provisions of s. 6 of the Rating Act, 1874, applied upon agricultural land, the increased value due to sporting rights should be inserted in the agricultural land column.

Gravel Pits.—These hereditaments came under the heading of "land," and were therefore within either class 6 or class 7 of Part I. of the Second Schedule. They required a gross and either 10 per cent. or 5 per cent. statutables depending upon their class.

Sports Grounds.—These came within class 6, required a gross and obtained 10 per cent. statutables.

Tithe.—This did not come within Part I. of the Second Schedule, and therefore did not require a gross. Apart from this the parson's tithe should be rated in exactly the same way as before the passing of the Act of 1925.

Farms.—Here again a very difficult question arose as to whether farms came within Part I. of the Second Schedule and have a gross value or not. He personally had formed a strong opinion that they did not come within Part I. and therefore did not have a gross. The Minister of Health and the Central Valuation Committee, however, had formed a contrary opinion, and in view of the fact that agricultural land was to be excused rates at the end of 1929, he thought it would be wiser, unless any of the members of that Institute were fortunate enough to possess a client who was anxious to litigate, to follow the recommendations of the Central Valuation Committee set out in their Resolution 17. Shortly stated, their recommendation was: First ascertain the gross value of the whole farm, then divide the gross between the dwelling house, farm buildings and the land, then ascertain the net annual value of each portion by reference to the various classes in Part I. of the Second Schedule.

The above were some of the more common forms of hereditaments to be met with in rural areas, and it only remained to emphasise that the definition of gross value in s. 68 and of net annual value in s. 22 (1) (*b*) were the same as before the passing of the Act, and that the basic principles of rating still remained that all hereditaments should be fairly rated the one with the other.

WORKMEN'S COMPENSATION: "REMUNERATION" OR "EARNINGS."

A SOMEWHAT important point was raised, but not determined, in the recent case Skidmore *v.* Bullock Lade & Co. (*The Times*, May 17), as to whether there was any distinction between the meaning of the words "Remuneration" and "Earnings" as used in the Workmen's Compensation Act, 1925. Section 3, subsection (2) excepts from the definition of "workman" any person employed otherwise than by manual labour whose remuneration exceeds £350 a year and thus takes such persons out of the Act, but section 10 (iv) provides that for the purposes of the provisions relating to earnings where the employer has been accustomed to pay the workman a sum to cover any special expenses entailed on him by the nature of his employment, the sum so paid shall not be reckoned as his "earnings."

In the case in question the applicant was a commercial traveller, who, in December, 1925, had been engaged on the terms of a letter that his remuneration should be £450 a year, but that his employers would provide him with a two-seater motor-car, the man to be responsible for its upkeep. In April, 1928, at the request of the employee, the employers by letter had agreed that the remuneration should be shown as £150 with £300 for expenses.

It was found in the case that this had been done at the request of the applicant "for income tax purposes," and the Court of Appeal in these circumstances treated the real engagement as that expressed in the letter of December, 1925, that the actual remuneration was £450 a year, and therefore it became unnecessary to consider what would be "remuneration" within the Act under section 3, subsection (2).

It is, however, to be observed that the basis upon which compensation is calculated is the "earnings" of the workman, and section 10, rule (i) indicates that the average weekly earnings are to be computed so as to give the rate per week at which the workman was "remunerated." Rule (i) is not in words expressly connected with Rule (iv) under which sums paid by the employer to cover special expenses entailed by the nature of the employment are to be excluded from "earnings," but the inference appears to be that "earnings" calculated in accordance with the rules are to represent the remuneration the workman receives, and therefore special expenses incurred connected with the employment would be deducted from the "remuneration" mentioned in section 3, subsection (2), when applying the test whether an employee was within or outside the Act.

Although the question was not decided by the Court, there are some expressions of the Master of the Rolls, however, which may conflict with the view we have expressed, and in the absence of express decision the point is a very doubtful one. In any event it would appear necessary that some evidence should be given as to the expenses actually incurred, and the Court in this case pointed out that no such evidence had been given as the applicant had solely relied upon the remuneration shown in the second letter. Thus the appeal failed and the man was held not to be a "workman" within the Act.

NEW BUILDINGS IN LONDON

The Editor would be glad to receive information for publication under this heading from architects, builders, or other persons concerned.

Baker-street. — SUPER-GARAGE. — Plans for the proposed super-garage, eight stories high, which will occupy an island site of 55,000 sq. ft. close to Baker-street Station, with frontages to Marylebone-road and Upper Gloucester-place, are being prepared. The architect is Mr. Gordon Jeeves, Hanover-square, W.1.

Curzon-street, W.—FLATS.—A large site in Shepherd Market, Curzon-street, W.1, has been cleared of old buildings to make way for the erection of a block of high-class flats. The architects are Messrs. R. H. Kerr & Son, 2, Golden-square, W.1.

East Dulwich.—EXTENSION.—An extension to Southwark Hospital is being carried out by Messrs. Elliman & Son, Ltd., building contractors, Beckenham, to the plans of Messrs. A. Saxon Snell & Phillips, FF.R.I.B.A., architects. Messrs. Young & Co., 6, Queen Anne's gate, S.W.1, are supplying the constructional steelwork.

Elephant and Castle.—PICTURE THEATRE.—Negotiations have been concluded for the purchase of a large block of property in New Kent-road, S.E.1, as a site for a new picture theatre. Accommodation for about 3,000 persons will be provided by the plans, now being prepared by Mr. George Coles, F.R.I.B.A., Craven-street, Strand, W.C.

Hammersmith.—FLATS.—A row of shops and flats, forming part of a larger scheme, is to be built on the Wormholt Housing Estate to the designs of Mr. S. B. Russell, F.R.I.B.A., Bank-chambers, Hitchin. The builders are Messrs. Geo. Bollom & Son, 1a, Essex-road, Acton, W.3.

Harlesden.—FACTORY ALTERATIONS.—The New River Works have been acquired by Messrs. British Booklet Matches (1928), Ltd., for conversion into a new factory and head offices. The alterations will be carried out by Messrs. D. G. Somerville & Co., Ltd., Grosvenor-gardens, S.W.1, to the designs of Messrs. Gunton & Gunton, Empire House, St. Martin's-le-Grand, E.C.1.

Hendon.—EXTENSIONS.—The extensions to the Hendon Child Welfare Centre have been approved by the Ministry of Health.

Limehouse.—EXTENSION.—The Borough Surveyor of the Stepney Borough Council is to proceed with preparation of the necessary working drawings, specifications and detailed estimates for the extension of the Public Library at Limehouse, E.

London Wall.—ALTERATIONS.—Messrs. Holbrook, Ltd., Foster-lane, E.C.2, are the contractors for alterations to premises at London Wall, E.C.2. The architects are Messrs. Moore & Hunter, Great Marlborough-street, W.1.

North Kensington.—FLATS.—Plans have been prepared for the Kensington Housing Trust, Ltd., for the erection of a block of 38 flats, of five floors, in Mary-place, W. The cost is estimated at about £20,000. The architects are Messrs. Culpin & Bowers, 3, Portsmouth-street, W.C.2.

Royal Exchange.—ALTERATIONS.—Considerable work is to be undertaken to the interior of the Royal Exchange, E.C., before the space recently vacated by the Corporation of Lloyds is taken over as offices by the Royal Exchange Assurance Co.

Stepney. — PREMISES. — Messrs. Ebenezer King, Ltd., builders, of 27, Whitefriars-street, Fleet-street, London, E.C.4, are about to erect a workshop and flats over at Nos. 28-30, Turner-street, E.1.

Tooting.—SHOPS.—Messrs. Marcus Estates, Ltd., 9, New Bridge-street, E.C.4, have purchased a site in Tooting High-street, S.W., where it is proposed to build a block of shops, etc

Vincent-square.—EXTENSIONS.—Sir James Gomer Berry, chairman of the Infants' Hospital, Vincent-square, Westminster, announced at the annual meeting that he wished to erect and equip a maternity block as a memorial to his wife. He asked the committee to accept a gift of £50,000.

Watling.—SCHOOL.—Negotiations are proceeding for the acquisition of a site for a Church of England school on the Watling Estate. It is proposed that the school shall accommodate between 300 and 400 children.

West Ham.—CINEMA RECONSTRUCTION.—The "Queen's Kinema" in Romford-road, E., is to be completely reconstructed and enlarged. Plans have been prepared, on the instructions of Mr. A. E. Abraham, 25, Shaftesbury-avenue, W.1, the owner, by Messrs. Leathart & Granger, AA.R.I.B.A., 7, John-street, W.C.2. The contract has been placed with the Pitcher Construction Co., 57, Ashburton-grove, N.7.

Wimbledon.—BUILDING.—Plans have been approved for the erection of a large two-story building at the factory of Messrs. British Electric Lamps, Ltd., Spencer Hill-road, S.W. The architects are Messrs. R. J. & J. S. Thomson, 49, Hill-road, S.W.19. Work will be commenced shortly.

FIRES IN THE CITY OF LONDON

IN the course of his Report, 1927, Dr. Waldo, H.M. Senior Coroner for London, states that of the 171 fires reported by him under the unique provisions of the City of London Fire Inquests Act, 1888, 28 were electrical in origin. Of this number, the fire and explosion in 14 cases occurred in electrical distribution boxes located in public City footways. The boxes in question belonged to the City of London Electric Lighting Company, the Charing Cross Electric Supply Company, and to the General Post Office; and the cause of these fires and explosions, as officially reported to him, was simply—"Defective Electrical Circuit." In no case was there any evidence of the presence of coal gas in connection with the explosions, and it had been suggested that the fumes given off by the bituminous covering of the cables caused the explosions.

In his Annual Report for 1925, in referring to 15 similar cases of electrical fires and explosions, he said: "So far these fires, producing extensive and dangerous upheaval of the footways, have not, happily, resulted in any deaths in the City, but several narrow escapes from death have occurred. I would suggest that a careful investigation of the root cause of these dangerous fires and explosions be made by the responsible authority (the Ministry of Transport) with a view, if possible, to their prevention." He had also suggested, on more than one occasion, that new up-to-date Regulations might usefully replace the old Board of Trade Regulations with a view to securing the safety of the public. In reply to a recent letter (January, 1928) addressed to the Minister of Transport, he had received a communication from the Electrical Commissioners to the effect that: "The suggested Regulations were still under consideration."

In addition to the 14 electrical distribution-box fires referred to, 14 electrical fires in City buildings, due to defective electrical circuits, had come under his investigation during 1927, the preventive treatment of which had already been dealt with by him in former Fire and Annual Reports (by means of the suggested compulsory adoption in the City of London of the excellent rules re wiring of the Institution of the Electrical Engineers) which would, he believed, prove a cheap insurance against loss of life and property.

TEACHERS IN TECHNICAL INSTITUTIONS

THE annual conference of the Association of Teachers in Technical Institutions, of 29, Gordon Square, London, W.C.1, was held at Bradford from May 26 to 29, when the presidential address was delivered by Mr. W. W. Sirman, B.Sc.

The President, speaking on the meaning of technical education, said that in spite of the great amount of effort which has been expended in the attempt to explain the meaning of Technical Education, its true nature is still occasionally misunderstood. We needed a new conception of the meaning of the term "educated." At the present time the title was chiefly restricted to those who had obtained their knowledge in the pages of books and not in the broader pages of life.

The President then touched upon some points raised in the recent report of the Emmott Inquiry into the relationship of technical education to other forms of education and to industry and commerce. This shows clearly that there was a general agreement not only as to the desirability but also as to the necessity of further advances in technical education if this country was to keep in the forefront as a manufacturing country.

In dealing with Technical Education generally, there were three main factors to be considered—the student, the teacher, the equipment. Apart from those attending full-time day courses, we had the students engaged in some form of industry, who could attend the technical college only for a part of their time. What had been their previous education? Some, probably the majority, would have entered industry immediately on leaving the primary school at the age of 14; others would have attended central schools or junior technical schools till the age of 15 plus; while a number would have spent four years in a secondary school, and, ignoring the attractions of the so-called black-coated jobs, would have entered industry at the age of 16. In each of these cases a different method of treatment would be required; we saw therefore the first of the difficulties a technical institution had to face. Taking as the fundamental basis of Technical Education the essential balance of brain and hand, we would find in some cases the development of manipulative skill had progressed farthest, while in other cases it had had the least attention. In every case, however, it was necessary that the future education should not be wholly industrial in character.

The question of the teacher loomed very largely in Technical Education. The "ideal" teacher would appear to be a most elusive individual. He was required to possess (i) Experience in research; (ii) Experience in industry, and (iii) Ability to teach; and these qualities rarely seemed to dwell in one and the same person. The reason why possessors of those most desirable qualities might not be abundantly found in any type of educational establishment was not far to seek. The possession of the first two of these qualifications usually permitted the fortunate owner to demand a much higher remuneration from industry itself than would be allotted to him by the Burnham Scales of Salary.

In respect to equipment there was little to say. The Federation of British Industries appeared satisfied that on the whole the equipment of technical institutions was adequate, although in some cases machines were not up to date. Here was a splendid opportunity for industrialists to show their interest in, and appreciation of technical education. In many towns there was one main industry, and it was from this industry that the majority of the students were drawn. If the equipment of the college was not of the most up-to-date type, and vas in any respect different from that which the student used in his daily tasks, why should not the employers make it their duty as well as their pleasure to see that those defects were remedied without the burden being thrown upon the ratepayers generally?

RATES OF WAGES IN THE BUILDING TRADE

[Every endeavour is made to ensure accuracy but we cannot be responsible for errors.]

	Masons.	Brick-layers.	Car-penters Joiners.	Plas-terers.	Slaters.	Plum-bers.	Pain-ters.	Lab-ourers.
Aberdare	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Accrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Alfreton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Alnwick	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Altrincham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashford Kent	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Ashington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ashton-under-Lyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Aylesbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Ayisham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Banbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Barnsley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barnstaple	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Barrow-in-Furness	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Barry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Basingstoke	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Bath	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bedford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Berwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bexhill	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Birkenhead	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Birmingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bishop Auckland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackburn	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Blackpool	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bolton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bournemouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bradford	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bradford-on-Avon	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Braintree	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bridlington	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Brighton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Bristol	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bromsgrove	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bromyard	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Bungay	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Burnley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Burton-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Bury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Buxton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Cambridge	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Canterbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Cardiff	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Carlisle	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chatham	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Chelmsford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chesterfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Chorley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cirencester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Clacton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Colchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Coventry	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Cranbrook	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Crewe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cromer	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Darlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Deal	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Denbigh	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Derby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Devizes	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dewsbury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Doncaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Dorchester	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Dorking	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Dovercourt	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Driffield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Droitwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Dudley	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Durham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Eastbourne	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
E. Glam. (Mon.Val.)	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Ely	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Exeter	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2
Exmouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Fakenham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Felixstowe	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Frome	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0
Glossop	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Godalming	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Goole	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Gosport	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Grantham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Great Yarmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Grimsby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Guildford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Halifax	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harpenden	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Harrogate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hartlepools	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Harwich	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hastings	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hatfield	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hednesford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Hereford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Herne Bay	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Hertford	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hitchin	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Hoddesdon	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Holt	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Huddersfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hull	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Hunstanton	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Huntingdon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Isle of Wight	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Ipswich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Keighley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Kettering	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Kidderminster	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
King's Lynn	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lancaster	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2

	Masons.	Brick-layers.	Car-penters Joiners.	Plas-terers.	Slaters.	Plum-bers.	Pain-ters.	Lab-ourers.
Leeds	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leicester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Leighton-Buzzard	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Lichfield	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lincoln	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Littlehampton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Liverpool	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Llandudno	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Llanelly	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
London:								
12 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
12-15 m. radius	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Loughborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Lowestoft	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Luton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Macclesfield	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Maidstone	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Malvern	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Manchester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Mansfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Margate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Market Harb'rough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Matlock	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Melton Constable	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Melton Mowbray	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Merthyr Tydfil	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Middlesbrough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newark	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Newbury	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Newcastle-on-Tyne	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Newcastle-ur-Lyme	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
New Forest	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newmarket	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newport, Mon.	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2½
Nottingham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Nuneaton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oldham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Paignton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Peterborough	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Plymouth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2½
Pontypridd	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Portsmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Preston	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Ramsgate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Redcar	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Redditch	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Reigate	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Retford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Ripon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Rochester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Rugby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Saffron Walden	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
St. Albans	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
St. Helens	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sawbridgeworth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Saxmundham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Scarborough	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Sevenoaks	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Sheffield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Shrewsbury	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Sittingbourne	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southend-on-Sea	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2·
Southport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
South Shields	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stevenage	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Stockport	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stockton-on-Tees	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stoke-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Stourbridge	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stourport	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stowmarket	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Strat.ord-on-Avon	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Stroud	1/5	1/5	1/5	1/5	1/5	1/5	1/4½	1/0½
Sunderland	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swaffham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Swansea	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Swindon	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/1½
Tamworth	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Taunton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Thetford	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0·
Torquay	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2·
Totnes	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4	1/0½
Trowbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/0·
Tunbridge Wells	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Uttoxeter	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/0½
Wakefield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Walsall	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wallsend	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Warminster	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
Warrington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Warwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wells (Norfolk)	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Welwyn Gar. City	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
West Bromwich	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Weston-sup.-Mare	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Weymouth	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Whitby	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wigan	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Winchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Windsor	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Wisbech	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Wolverhampton	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Woodbridge	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0
Worcester	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worksop	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Worthing	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/2½
Wrexham	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wroxham	1/3	1/3	1/3	1/3	1/3	1/3	1/3	11½
Wymondham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
York	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½

For rates of wages in the Building Trade in Scotland, see page 963.

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given is the latest date when the tender, or the names of those willing to submit tenders, may be sent in, the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.

Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

JUNE 4.

Aldershot.—Grandstand.—To seat 1,000 to 1,200 in the Recreation Ground, High-st., Aldershot, for the T.C. B.E.'s Office, Municipal Buildings, Aldershot.

Altrincham.—Hall.—Extensions for new dining hall and kitchen block at County High School for Girls, for Chester County E.C. F. Anstead Browne, F.R.I.B.A., County Architect, Newgate-st., Chester. Dep. £1 1s.

Buxton.—Extensions.—To building, for Buxton Corporation Electricity Power Station. Chas. Flint, L.R.I.B.A., architect and surveyor, 5, The Quadrant.

Chelmsford.—Painting.—External of 122 houses on Boarded Barns estate, for T.C. E. J. Miles, B.E.

Coventry.—Houses.—38 non-parlour 3-bedroom houses, near Gulson-rd. and Harnall-lane East, for T.C. E. H. Ford, City E. and S. Dep. £3 3s.

Croydon.—Extensions.—Also alterations at Mayday-rd. Hospital, Mayday-rd., for B.G. H. Berney, architect, 33-35, High-st. Dep. £3 3s.

Doncaster.—Conveniences.—At Elmfield-park, and a brick pavilion at Hexthorpe Flatts, for C.B. R. E. Ford, Estates Surveyor

Ealing.—Additions.—Also alterations and additions to Administrative block and wards at Maternity Hospital, South Ealing, for Chiswick and Ealing Hospitals Committee. E. Willis, Chief Engineer, Town Hall, Chiswick. Dep. £1 1s

East Barnet.—Houses.—Pair of semi-detached houses at Leicester-rd., New Barnet, for U.D.C. C. M. Barnes, Deputy Engineer and Surveyor. Dep. £1.

Evesham.—Shelter.—In Abbey-pk., for T.C. J. Abbott, B.S.

Glasgow.—Painting.—At various schools, for Education Authority. J. Clark, Director of Education. Dep. 10s. 6d. each specification.

Golborne.—Houses.—14 non-parlour type on Heywoods housing site, for U.D.C. H. Eckersley, clerk Dep. £2 2s.

Gosport.—Fencing.—Corrugated and wrought iron fencing at Gordon Park, for E.C. A. Barlow, architect, Town Hall.

Heanor.—Houses.—36 parlour and non-parlour type houses, in blocks of fours and pairs, and 28 parlour and non-parlour type houses in blocks of fours and pairs, on Old Burnt House-rd., for U.D.C. R. Archer, Housing Architect. Dep. £1 1s.

Howth.—Store.—Rebuilding of, at Corr Hill. F. Higginbotham, M.I.C.E.I., Town Hall.

Llanybyther.—Building.—Out-buildings at Tynfron, Llanwenog, for L. G. Williams, C.C., Penyrallt-newydd, Llanybyther. R. Jones, L.R.I.B.A., M.I.S.E., architect, Llandyssul.

Monmouth.—Extensions.—For cloakroom extensions and decoration at Rolls Hall, for T.C. W. J. H. Biddle, B.S. Dep. £2.

Newcastle-upon-Lyme.—Decorating.—Certain work of interior and exterior decoration at St. John's Institution, for B.G. S. E. Lovatt, clerk.

Salford.—Garage.—Tram depot and omnibus garage at Weaste, for T.C. C. Swain & Partners. Lloyds Bank-buildings, King-st., Manchester.

Southport.—Garage.—Motor-'bus garage in Canning-rd., for C.B. A. E. Jackson, B.E. Dep. £1 1s.

Staines.—Houses.—Erection of 24, at New-rd., Harlington, Middlesex, for the R.D.C. D. C. Fidler, 8., London-rd., Ashford, Middlesex. Dep. 2 2s.

Swansea.—Painting.—Buildings and sheds at Corporation's refuse destructor works, Llangyfelach-st., for Corporation. J. R. Heath, B.E. and S., Guildhall

Tiverton.—Houses.—16 non-parlour houses at Uxculme, for R.D.C. Dixon and Bamsey, architects, 25, St. Peter-st.

Walton-on-Thames.—Houses.—50 in Molesey-rd., Hersham, for U.D.C. R. Wilds, E. and S.

Woking.—Cottages.—13 pairs of cottages at Old Woking, for U.D.C. G. J. Wooldridge, S.

Worsborough. — Painting. — External of:—68 houses, Ward Green, and 22 houses, Blacker Hill, for U.D.C. T. Shield, E. and S.

JUNE 5.

Islington.—Repairing and Painting.—The exteriors and common staircases of (1) Halton Mansions, Canonbury N.1; (2) Manchester Mansions, Sunnyside-rd., N.19, for Islington B.C. Housing Manager, Municipal Buildings. Dep. £1 in respect of each work.

Manchester.—Painting.—Interior at Withington Institution, for B.G. E. Hargreaves, Superintendent of Works.

Monaghan. — Sanatorium Extension. — Of the County Sanatorium involving the erection of pavilion and staff quarters. Peter Coyle, C.E., Courthouse, Monaghan.

Ramsgrange.—Additions.—To St. Louis Convent, Ramsgrange, County Waterford, for Rev. Mother. T. J. Cullen, F.R.I.A.I., architect, 25, Suffolk-st., Dublin. Dep. £2 2s.

South Dublin.—Conversion.—Of buildings of Tallaght Aerodrome into 20 labourers' cottages, for R.D.C. G. Gallagher, clerk.

Sunderland.—Painting.—At Sunderland Cemetery, for Corporation. B.E.

Wigan.—Telephone Exchange.—At Wigan, for the Commissioners H.M.O.W., Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

JUNE 6.

Brighton. — Shops, Dwelling Houses.—Erection of 4 combined on the North Molsecomb estate, Lewes-rd., for the Corporation. D. Edwards, M.Inst.C.E., F.S.I., B.E. and S., Town Hall, Brighton. Dep. £2 2s.

Donabate. — Painting. — External and internal painting work at Grangegorman Mental Hospital, Dublin, and Portrane Branch Mental Hospital, Donabate, Co., Dublin, for Committee. Chief Clerk, Grangegorman Mental Hospital, Dublin.

Dunecht.—Alterations.—To house, etc., Mains of Dunnottar. David Morris, Factor, Estates Office, Dunecht.

Guildford.—Repairs.—And decorations to certain houses in Castle-st., for T.C. J. W. Hipwood, Assoc.M.Inst.C.E., B.S., Municipal Offices.

Hackney.—Flats.—Erection of 100 in 5 blocks 5 stories in height at Southwold-rd., Clapton, for the B.C. Percival Holt, B.E. and S., Town Hall, Hackney, E.8. Dep. £10.

Hove.—Alterations.—Altering into offices various rooms, including re-decorating, etc., at 74, Church-rd., for T.C. B.S.

Islington.—Public Hall.—Erection of adjoining Municipal Buildings in Upper-st., for the B.C. of Islington. Mr. E. C. P. Monson, F.R.I.B.A., Finsbury Pavement House, 120, Moorgate, E.C.2. Dep. £3.

Newcastle-upon-Tyne.—Houses.—172 brick houses on section "F" of Walker housing estate, for T.C. Housing Architect, 18, Cloth Market. Dep. £2 2s.

Newcastle-upon-Tyne.—Repainting.—Externally of 208 flats on Delaval-rd estate, Benwell; 144 houses on Walker Housing estate, etc., for T.C. Housing Architect, 18, Cloth-market. Dep. £1 1s.

Penge.—Electric Lighting Installation.—At the Oakfield-rd. School, Penge, for the U.D.C. H. W. Longdin, S., Town Hall, Anerley, S.E.20.

Plymouth.—Buildings.—Supply and erection of steel buildings at Milehouse Depot, for C.B. H. P. Stokes, Engineer and General Manager, Tramway Offices, Milehouse.

Southampton.—Wind Screens.—Construction of covered wind screens on the Royal Pier, for the Southampton Harbour Board. Board's Engineer, Harbour Offices, Town Quay. Dep. £1

***Stepney.**—Mortuary Improvements.—Alterations to existing Mortuary Buildings, etc., at South Grove Institution, South Grove, Bow, for the Stepney Guardians. S. McClelland, clerk, Bancroft-rd., Mile End, E.1. Dep. £1 1s.

Sunderland.—Conversion.—Three houses, Southwick police buildings, for C.B. B.E. Dep. £2 2s.

JUNE 7.

Croydon.—Painting.—Sundry works of cleaning, painting and distempering at Borough Hospital, Waddon, for T.C. B.E. Dep. £1 1s.

Dublin.—Extensions.—To National School, City Quay, for Rev. Daniel Byrne, Adm. O'Callaghan & Webb, architects, 31, South Frederick-st.. Dep. £2 2s.

Kensington.—Alterations.—Construction of an additional floor, with staircase, over a portion of the Central Library, for the Kensington B.C. B.E., Town Hall, Kensington, W.8. Dep. £1 1s.

***Leicester.**—Houses.—Erection of 362 on the Braunstone Estate, for the Corporation, in four or more contracts. J. S. Fyfe, A.R.I.B.A., Housing Architect, Wyggeston House, 18, Highcross-st., Leicester. Dep. £2 2s.

Manchester.—Installation.—Of electric lighting at Cheetham Municipal School, Smedley-st., Cheetham Hill-rd., for E.C. Education Offices, Deansgate. Dep. £1 1s

North Bromsgrove.—Houses.—Six parlour type semi-detached houses in Barnt Green, for the U.D.C. G. W. Booth, S., Catshill, Bromsgrove.

Paddington.—Cleaning, Painting and Repairs.—At Paddington Infirmary, 285, Harrow-rd., W.9, for the Guardians. P. Biddulph Hancock, clerk, Guardians' Offices, 313-319, Harrow-rd., W.9.

Stepney.—Demolition.—Of certain chimney stacks and making good, etc., at the Mile End Hospital, Bancroft-rd., for the Guardians. Administrative Offices, as above.

JUNE 8.

***Croydon.**—Alterations.—Conversion of and additions to public convenience, Frith-rd., for the B.C. B Engr., Town Hall, Croydon. Dep. £2 2s.

Doncaster.—Electric lighting.—Installation at Hyde Park Council School, for E.C. Secretary, Education Offices

***Edmonton.**—Internal Painting Work.—To be carried out at Edgebury House, Woburn Sands, near Bletchley, for the Guardians. E. Ridley, Clerk to the Guardians, Board Room, 77, Bridport-rd., Edmonton, N.18.

Guildford.—Repairs.—Decorations, etc., to certain elementary schools, for T.C. J. W. Hipwood, B.S.

Kew.—External and Internal Painting.—Of the centre portion of Temperate House, Royal Botanic Gardens, Kew, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1.

Kingsbridge.—Houses.—6, at Walke's Pool, Kingston, for R.D.C. N. Harris, S. Dep. £1 1s.

Kingsbury.—Houses, Road and Sewers.—Construction of 30 houses on Church-lane housing site, for the U.D.C. R. C. N. Newport, S., Council Offices, Kingsbury, N.W.9. Dep. £3 3s.

JUNE 9.

Eccles.—Houses.—64 non-parlour on Edison-rd. estate, for T.C. T. Elce, M.Sc., B.E. and S. Dep. £2 2s.

Smethwick.—Houses.—234 non-parlour type on Halfords-lane site and 44 parlour type on Thimble-mill-rd. estate, Warley, for C.B. R. Fletcher, B.E. and S. Dep. £5 5s.

Totnes.—Demolition.—Of buildings at rear of Old Post Office, for erection of new cinema. H. G. Tapley, East Gate Inn, Totnes. Dep. £1 1s.

JUNE 11.

***Bognor.**—18 Flats.—Erection of, for the U.D.C. Surveyor, High-st. Dep. £2 2s.

***Brighton.**—Rebuilding.—Of Nos. 177 and 178, Western-rd., Brighton, for the B.C. Thomas Garrett & Son, F. & A.R.I.B.A., 34, Ship-st., Brighton. Dep. £1 1s.

***Croydon.**—Houses.—Erection of 50 (56 Lettings) at Mitcham-rd. Estate, for the B.C. B.E., Town Hall, Croydon. Dep. £3 3s.

Gravesend.—School.—Elementary school at Ordnance-rd., to accommodate 1,180 children, for T.C. A., 5, Woodville-ter. Dep. £3 3s.

Liverpool.—Painting.—Internal and limewashing, etc., at certain elementary schools, for T.C. Land Steward and Surveyor.

Plymouth.—Alterations.—At Ker-st. school, Devonport, for E.C. W. H. May, F.R.I.B.A., 23, Lockyer-st.

JUNE 12.

Bathgate.—Lyne Scheme.—For sluicekeeper's and shepherd's cottages, etc., at Lyne reservoir, for D.C. J. & A. Leslie & Reid, C.E., 72a, George-st., Edinburgh. Dep. £1.

Conisborough.—Installation.—Of electric lighting at Conisborough new middle school, for West Riding E.C. Education Department, County Hall, Wakefield.

Essex.—Elementary School.—At Little Thurrock, for the Essex C.C. Jno. Stuart, F.R.I.B.A., C.A., Springfield Old Court, Chelmsford. Dep. £1 1s., to F. H. Owers, Duke-st., Chelmsford.

Essex.—Elementary School.—At Rivenhall, Silver End, nr. Braintree, for the Essex C.C. Jno. Stuart, F.R.I.B.A., C.A., Springfield Old Court, Chelmsford. Dep. £2 2s., to F. H. Owers, Duke-st., Chelmsford.

Glasshoughton.—Additions.—To school premises and erection of caretaker's house at Glasshoughton Ashton-rd., Council school, for West Riding E.C. Education Department, County Hall, Wakefield.

Goole.—Painting.—Inside and outside of Secondary School buildings, and creosoting fences and gates to playing fields, for Governors. W. T. Silvester, Estcourt-chambers.

Guiseley.—Installation.—Of electric lighting at new school, for West Riding E.C. Education Department, County Hall, Wakefield.

Matlock.—Public Shelter.—At Pleasure Grounds, Hall Leys, for The Matlocks U.D.C. Joseph Turner, Town Hall.

Pontypridd.—School.—Girls' school at Hawthorn, Pontypridd, for accommodation of 280 children, for U.D.C. W. E. Lowe, S. Dep. £2.

St. Pancras. — Superstructure. — For block of dwellings at Ossulston-st., for the L.C.C. Architect to the Council, The County Hall (Room No 3), Westminster Bridge, S.E.1. Dep. £2.

Watford.—Cottages.—8 on Primrose Hill building site, Abbot's Langley, for R.D.C. Dep. £2.

West Riding.—Installation.—Low-pressure hot water, at (1) Conisborough new middle school, and (2) Bramley and Wickersley new school, for E.C. Education Department, County Hall, Wakefield.

JUNE 13.

Devonshire.—Repairs.—At various schools, for Devon Education Committee. County Architect's Office, 97, Heavitree-rd., Exeter.

East Ham.—Repairs, Painting and Sundry Works. —To various schools and public libraries, for the B.C. B.E., Town Hall, East Ham, E.6. Dep. 10s. in respect of each specification.

East Ham.—Wiring.—For electric lighting of Napier-rd. school, for C.B. Electrical Engineer. Dep. 10s.

***Hendon.**—Recreation Hall.—At Colindale Hospital, Colindale-av., Hendon, for the M.A.B. Office of the Board, Victoria Embankment, E.C.4. Dep. £1.

Larne.—Alterations.—In connection with conversion of Workhouse building into a district hospital, for B.G. J. A. Hanna, architect and civil engineer, 29, Wellington-place, Belfast. Dep. £2 2s.

***Liverpool.**—Houses.—Erection of 203 A.710 and A.760 type houses on the Fazakerley Hall estate, and 52 type B.950 houses on the Norris Green estate, for the Housing Committee. Acting Director of Housing, Municipal Buildings, Dale-st., Liverpool. Dep. £1 1s. for each of the estates mentioned.

***London.**—Cleaning and Painting.—At Brook Fever Hospital, Shooters Hill, S.E.18, for the M.A.B. Office of the Board, Victoria Embankment, E.C.4. Dep. £1.

Middleton.—Houses.—Lump sum tenders for the erection of 50 houses on Rhodes housing site, for the T.C. B.A., Town Hall, Middleton, Lancs. Dep. £2 2s.

Nottingham.—Painting.—Also cleaning various schools, for E.C. A. H. Whipple, Director of Education. Dep. £1.

Red Hill.—Telephone Exchange.—At Red Hill, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

Stoke-on-Trent.—Repairs.—To 2 houses at Smallthorne, for T.C. E. B. Sharpley, Town Clerk.

***Surrey and Kent.**—Alterations and Extension.—1, alteration to stores, Downs Hospital, Sutton; 2, verandah extension and new milk store at Princess Mary's Hospital, Margate, for the M.A.B. Office of the Board, Embankment, E.C.4. Dep. £1 in respect of each work.

***Various Places.**—Cleaning, Painting and Repair Works.—At various hospitals and casual wards for the M.A.B. Office of the Board, Embankment, E.C.4. Dep. £1

JUNE 14.

***Heston and Isleworth.**—Houses.—Erection of 112 non-parlour type on the Marlborough Park estate in four contracts, for the U.D.C. J. G. Carey, Council House, Hounslow. Dep. £2 2s.

Tottenham.—Entrance Gateway.—Formation of a new entrance gateway to the cemetery, in Church-rd., Tottenham, for the Burial Board. J. C. S. Mummery, architect, 34, Bloomsbury-sq., W.C.1.

Worthing.—Post Office and Telephone Exchange.—At Worthing, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

JUNE 16.

Bristol.—Painting.—Also colouring, etc., of certain schools, for T.C. W. Ludford Freeman, Director of Education. Dep. £1 1s.

Clutton.—Building.—Converting a disused building into a tramp ward, for R.G. S. J. Pierce, Farrington Gurney.

Sheffield.—Stores.—Also workshops, Sheaf-st., for T.C. S. E. Fedden, general manager and engineer, Commercial-st. Dep. £1 1s.

West Suffolk.—Repairs.—New offices at Lakenheath Council school, and painting and repairs to following Council schools:—Assington, Beyton, Brockley, Fornham All Saints, Glemsford, Haverhill, Whixoe, Wickhambrook, Woolpit, and the Newmarket Technical Institute, for E.C. A. Ainsworth Hunt, C.A., 51a, Abbeygate-st., Bury St. Edmund's.

JUNE 17.

Croydon.—Alterations.—To administrative block, Borough Hospital, Waddon, for T.C. B.S. Dep £1 1s.

JUNE 18.

Armagh.—Reconstruction.—Building and reconstruction of premises in William-st., Lurgan, for E.C. J. St. J. Phillips, B.E., 16, Donegall-sq. South, Belfast. Dep. £3 3s.

Bermondsey.—Block of Dwellings.—Erection of, at Dickens estate, Bermondsey, for the L.C.C. Architect to the Council, The County Hall (Room No. 3), Westminster Bridge, S.E.1. Dep. £2.

Ealing.—Houses.—21 on land adjoining distributing station, Pope's-lane, for T.C. J. D. Knight, Borough Electrical Engineer and Manager.

Halifax. — Decorating. — At Friendly Trade Societies' Club, St. James's-rd. L. T. Wormald, Sec.

***Kingston-upon-Thames.** — Non-parlour type Houses.—Erection of 60, for the Royal B.C. B.S., Municipal Offices, Kingston-upon-Thames. Dep. £1 1s.

Ongar.—School.—Girls' open-air school at West Ham Residential Open-air School, Fyfield (near Ongar), for C.B. John H. Jacques, L.R.I.B.A., Architect to the Committee, 61, West Ham-lane, Stratford, E.15. Dep. £2.

Wath-on-Dearne.—School.—New middle school (to accommodate 380 children) at Brampton Bierlow, near Wath-on-Dearne, for Educational Foundation of George Ellis (1711). C. F. Moxon, architect, 3, Regent-st., South Barnsley. Dep. £2 2s.

JUNE 19.

***South Kensington.**—Re-drainage and Other Works.—To the forecourt of the Imperial Institute, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

***Stepney (E.).**—Foundations and Retaining Walls, etc.—Construction of at Limehouse Electricity Generating Station, Narrow-st., E.14. Contract No. 304, for the B.C. B. Engr. and Sur., Bernard J. Belsher, Municipal Offices, Raine-st., E.1. Dep. £10 (Treasury Notes).

***Walthamstow.**—Interior and Exterior Renovation in Painting, Distempering, etc.—To various schools, for E.C. H. Prosser, F.R.I.B.A., 263, High-st., Walthamstow, E.17.

JUNE 20.

***Hants.**—Telephone Exchange.—At Farnborough, for the Commissioners H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

Leicester.—Demolition and Building Work.—Demolition of the existing central wing, and the erection of a new 4-story block, for the Board of Governors, Leicester Royal Infirmary. Pick, Everard, Keay & Gimson, 6, Millstone-lane, Leicester. Dep. £3 3s.

***Liverpool.**—Tenement Dwellings.—Erection of 46 on the Rankin-st. area, for the Housing Committee. Acting Director of Housing, Municipal Buildings, Dale-st., Liverpool. Dep. £1 1s.

JUNE 28.

***Acton (W.3).**—Redecorations and Repairs, Tarpaving, Central Heating.—At various schools, for the B.C. B.E., Municipal Offices, Acton, W.3. Dep. £1 1s., to Boro. Treas.

JULY 7.

***Chelmsford.**—New County Offices.—Erection of the first section to front King Edward's-av. and Threadneedle-st., Chelmsford, for the Essex C.C. Jno. Stuart, F.R.I.B.A., C.A., Springfield Old Court. Dep. £3 3s. to F. H. Owers, City Accountant, Duke-st., Chelmsford.

NO DATE.

Belper.—Theatre Alterations.—Alterations and additions to the Palace Theatre, King-st. E. Bryan Dean, architect, Market Chambers, Mansfield. Dep. £1 1s.

Birmingham.—Block.—Special diseases block at general hospital on site fronting Steelhouse-lane, for Board of Management of General Hospital. Martin & Martin and W. H. Ward, architects, 106, Colmore-row. Dep. £2 2s.

Blackpool. — Reconstructing.—Of premises at corner of Marshall-st. and Kent-rd., Revoe, for Blackpool Central Working Men's Club and Institute. Secretary, 1a, Chadwick-st., Revoe. Dep. £1 1s.

Blyth, Northumberland.—Cottages.—Two semi-detached class cottages in Sea View-rd., for Royal National Lifeboat Institution. Hill & Honeyman, 6, Eldon-sq., Newcastle-on-Tyne. Dep. 10s.

Bo'ness.—Houses.—32, at Newtown, Bo'ness, for The Kinneil Cannel & Coking Coal Co., Ltd. A. D. Haxton, 3, High-st., Leven. Dep. £1 1s.

***Brighton.**—Cottages.—Erection of 4 on the Moulsecoomb estate, for the British Legion. A. Lloyd Thomas & Douglas Wood, 35, Craven-st., Strand, W.C.2.

Caernarvon.—House.—House and shop at Hampton-rd., for Miss E. Forster. R. Pierce, F.R.I.B.A., architect and surveyor, Frondeg, Caernarvon.

Dundee.—Additions.—To caretaker's house at Butterburn School, for E.C. Master of Works.

Gildersome.—Painting.—Of 16 cottages at Providence-place, Street-lane. S. Barron, Street-lane.

Hemsworth.—Vicarage.—In Fitzwilliam, Hemsworth, for Vicar of Kinsley. P. A. Hinchcliffe, F.R.I.B.A., 14, Regent-st., Barnsley.

Hull.—Alterations.—To premises in Prospect-st. A. Easton, F.R.I.B.A., architect, 1, Manor-st.

Leicester.—Extensions.—Also extensions to Club and new Steward's House, Saffron-lane, for Aylestone Park Working Men's Club and Institute. G. Lawton Brown & Percy C. Jones, architects, Spencer-chambers, 4, Market-place. Dep. £1 1s.

Marton.—Garage.—At Vicarage-lane. J. B. Singleton, architect and surveyor, 7, Cedar-st., Blackpool.

Pembroke. — Alterations.—To Cross Cottage House, Clarbeston-rd. Secretary.

Romford.—Shops.—In Romford. S. Phillips Dales, F.R.I.B.A., 63, High Holborn, W.C.1.

Salisbury. — Alterations. — Also additions to Beatrice Ward, at General Infirmary. J. S. Harding, architect, 65, New-st.

Taunton.—School.—Proposed school and hostels at Sandhill Park, near Taunton, for Somerset C.C. County Architect, Lloyds Bank Chambers, Weston-super-Mare.

***Wealdstone.**—New Concert Hall.—At Wealdstone, for the Social Club. Secretary, 33, The Bridge, Wealdstone.

Weston-super-Mare. — Conveniences. — On the Marine Parade at Glentworth Bay, for U.D.C. H. A. Brown, E. and S., Town Hall. Dep. £3 3s

Windsor.—Playhouse.—Erection of Windsor Playhouse in Thames-st., for Playhouse, Ltd. R. Cromie, A.R.I.B.A., 73, Edgware-rd., W.2.

MATERIALS, ETC.

JUNE 4.

Edinburgh.—Cast Iron Pipes.—For Gas Dept. H. H. Gracie, engineer and manager, 15, Calton Hill.

JUNE 5.

Hipperholme.—Granite, etc.—For U.D.C. F. M. Horner, clerk.

JUNE 7.

Leeds.—Granite, etc.—For T.C. E. W. Cockerlyne, Highways Engineer, 155, Kirkstall-rd.

JUNE 9.

Glasgow.—Builders' Materials.—For Clyde Navigation Trust. Jas. Macfarlane, general manager, 16, Robertson-st., Glasgow.

Stockton-on-Tees.—Builders' Materials.—For Gas Dept. Engineer and general manager, Corporation Gas Works, Thompson-st.

JUNE 11.

Howth.—Road Materials.—For U.D.C. F. Higginbotham, S., 3, Clare-st.

Smethwick.—Builders' Materials.—For C.B. E. Hardiker, engineer and manager, Gas Works, Rabone-lane.

ENGINEERING, IRON AND STEEL.

JUNE 4.

Maidstone.—Extensions.—Extensions and alterations to sewage disposal works, sewage pumping station, trunk sewers and a river crossing, at Aylesford, Allington and Maidstone, for T.C. T. F. Bunting, B.S. Dep. £5 5s.

Scarborough.—Sewerage.—Sewage disposal works at Wheatcroft, Cayton, near Scarborough, comprising detritus and subsidence tanks, bacteria bed, humus tank and filter beds, together with laying of about 550 lin. yds. of 12-in. and 9-in. sewers, construction of manholes, and other appurtenant works, for R.D.C. S.

JUNE 5.

Alexandria (Egypt).—Bridge.—Metallic swing bridge over Mahmudia Canal, for H.M. Consul-General. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Ref. A.X.6030.)

Bilston. — Sewerage. — Construction of tanks, filters, and other appurtenant works at the Lunt Outfall; also of about 1,600 yds. of stoneware, cast-iron and brick sewers, varying from 12 in. to 36 in. diameter, together with manholes, etc., for U.D.C. Berrington & Son, engineers, Prudential Chambers, Lichfield-st., Wolverhampton. Dep. £5 5s.

Cardiff.—Bridge.—Construction of a reinforced concrete bridge over Nant Myddlyn, Rhiw-Saeson, Pentyrch, for R.D.C. W. Farrow, engineer, Park House, 20, Park-place, Cardiff. Dep. £3.

Llandovery.—Bridge.—Construction of reinforced concrete bridge over the Avon Bran, together with approach walls, river regulation works, road work, etc., for Carmarthenshire C.C. D. S. Samuel, C.S., Carmarthen.

JUNE 6.

Braintree.—Sewage.—Sewage disposal works at Rivenhall, for R.D.C. S. F. Arthur Long, consulting engineer, 4, Queen Anne's-gate, Westminster, S.W.1. Dep. £2 2s.

Castlereagh.—Sewer.—Also septic tank at Marino, for R.D.C. W. K. Wheeler, C.E.

Glamorgan.—Bridge.—For (1) single span reinforced concrete arch bridge, 73 ft. 6 in. span and 50 ft. wide, over River Ogmore, about 1¼ miles south-west of Bridgend, including mass concrete abutments, wing walls, reinforced concrete arched ribs and superstructure, together with all incidental works, and (2) construction of a new road from existing public road near Broadlands to junction of Cardiff-Swansea main road with Waterton-Coychurch-rd., for C.C. T. Mansel Franklen, Clerk of C.C., Glamorgan County Hall, Cardiff. Dep. £5.

Hawarden.—Bridge.—Reinforced concrete bridge and approaches at Corrig-Llwydion, Ffrith, near Wrexham, for R.D.C. H. Hughes, S. Dep. £2 2s.

Ruthin.—Bridges.—Two reinforced concrete bridges, one at Pentrellyncymer, and other at Talycafn Ford, for R.D.C. D. E. H. Roberts, clerk.

Sligo.—Jetty.—Reconstruction in reinforced concrete of 2 timber deep-water jetties at Sligo Harbour, for Commissioners. J. A. McLoghry, secretary. Dep. £2 2s.

JUNE 7.

London.—Bridges.—8 deck span girder bridge, for Bengal-Nagpur Rly. Co., Ltd.. R. C. Volkers, secretary, 132, Gresham House, Old Broad-st., E.C.2. Charge £1.

JUNE 8.

Llanfairfechan.—Water Works.—Construction of an earthwork embankment, overflow weir, meter-house, etc., at Aber Lake, on source of Afon Anafon, together with provision of temporary syphon plant to lower the lake level during work, together with pipeline to Llanfairfechan, consisting of 6 in., 5 in. and 4 in. cast-iron pipes to a total length of approximately three miles, for U.D.C. H. B. Ward, chartered civil engineer, Commerce-chambers, 15, Lord-st., Liverpool. Dep. £3 3s.

JUNE 9.

Poole.—Coast protection at Canford Cliffs, including construction of a sea wall in reinforced concrete, approximately 500 yds. in length, together with groynes, promenade, subsoil drains, rubble walls and other work incidental thereto, for T.C. E. J. Goodacre, B.E.

JUNE 11.

Windermere.—Extension.—Five additional sludge lagoons and other appurtenant works at Tower Wood sewage works, for U.D.C. F. C. Needham, E. and S. Dep. £2 2s.

JUNE 12.

Manchester.—Pipework.—High and low pressure pipework, supports, etc., for steam-heating services (Specification No. 221), at City Power Station. H. C. Lamb, Electricity Dept., Town Hall. Dep. £1 1s.

JUNE 14.

***St. Marylebone.**—Demolition and reconstruction of concrete bridge.—In steel and concrete, over canal at Park Road, for the B.C. Sir E. Owen Williams, K.B.E., engineer, 5, St. George's-rd., Westminster, S.W.1. Dep. £5 5s.

JUNE 22.

Dublin.—Steelwork.—112 tons of steelwork, for Gt. Southern Railway. J. F. Sides, chief engineer, Broadstone Station, Dublin.

JUNE 25.

Docking.—Tower.—Reinforced concrete water tower, about 1¾ mile of 4 in. and 3 in. water mains, with street fountains, hydrants, etc., for R.D.C. J. A. Stoughton, clerk. Dep. £1 1s.

JUNE 27.

***Hackney.**—Condensing Water Works.—Construction of intake and discharge chambers on the banks of the Lee Navigation, together with concrete intake and discharge pipe-lines, for the B.C. Boro. Electrical Engineer, 18-24, Lower Clapton-rd., E.5. Dep. £2 2s.

NO DATE.

Axbridge.—Sewerage.—Carrying out of work of sewerage scheme, for R.D.C. H. A. Brown, E. and S., Weston-super-Mare. Dep. £5 5s.

ROAD, SEWERAGE, AND WATER WORKS.

JUNE 4.

Belfast.—Main.—Laying a 4-in. water main in Shore-rd., Whiteabbey, for R.D.C. W. D. R. Taggart, C.E.

Bognor.—Paving.—Provision and laying of about 6,000 sq. yds. of tarpaved footpaths, for U.D.C. J. Draper, S.

Calverley.—Sewer.—Laying of approximately 1,300 lin. yds. of 9-in. diameter iron pipe sewer, 2,000 lin. yds. of 9-in. diameter earthenware pipe sewer, together with construction of various manholes, etc., for U.D.C. A. Brooksbank, E., 14, The Exchange, Bradford. Dep. £2 2s.

East Barnet.—Sewers.—Construction of about 137 yds. of 9 in. stoneware pipe soil and surface water sewers at Potters-lane, together with necessary manholes and fittings, for U.D.C. Henry York, E. and S. Dep. £1.

Glamorgan.—Mains.—Provision and laying of cast-iron water mains between Pencoed and Llanharan, consisting of about 4,300 yds. of 10-in. diameter cast-iron pipes and 280 yds. of 4-in. diameter cast-iron pipes, together with valves and other appurtenant works, for Mid-Glamorgan Water Board. Thomas & Morgan & Partners, civil engineers, Pontypridd.

London.—Reconstruction.—Of carriageway and repaving of footways, in Crisp-rd., for Hammersmith B.C. R. Hampton Clucas, B.E. and S.

London.—Repaving.—With granite setts and wood blocks of portions of carriageway, also taking up and relaying of existing kerbs and York stone flagging of parts of the footways of Blackwall tunnel, for L.C.C. Chief Engineer, Old County Hall, Spring-gardens, S.W.1. Dep. £2.

Manchester.—Paving.—Sewering, draining, paving (rock asphalt), flagging (artificial flags), etc., Birchgrove, Rusholme, from Dickinson-rd. to southerly side of Brighton-grove; sewering, draining, paving (tarmacadam), flagging (artificial flags), etc., Parsonage-rd., Withington, from Parrs Wood-rd. North to Mauldeth-rd.; sewering, draining, paving (rock asphalt), etc., passage behind 74-84, School-lane, 3-49, and laundry, Whitehall-rd., 4-66, Ladysmith-rd., adjoining 3, Whitehall-rd., and 60 and 62, Ladysmith-rd., Didsbury; passage adjoining 52 and 54, Ladysmith-rd., 49 and laundry, Whitehall-rd., Didsbury; passage behind 58-68, School-lane, 3-27, Dundonald-rd., 2-26, Whitehall-rd., adjoining 26 and laundry, Whitehall-rd., and 3, Dundonald-rd., Didsbury; passage behind 42-52, School-lane, 1-37, Countess-rd., 4-48, Dundonald-rd., adjoining 1, Countess-rd., and 40 and 42, Dundonald-rd., Didsbury; passage behind 26-36, School-lane, 3-21, Winifred-rd., 2-26, Countess-rd., adjoining 3, Winifred-rd., 26 and garden of 37, Countess-rd., and L.M. and S.R., Disbury; passage behind 16-24, School-lane, 4-10, Winifred-rd., adjoining 14, School-lane, 4-10 and garden of 21, Winifred-rd. and L.M. and S.R., Didsbury, for T.C. H. Dunks, acting town clerk. Dep. £1 1s.

Tandragee.—Macadam.—2,464 cubic yds. tar grouted macadam; 340 cubic yds. water-bound macadam; 24,122 sq. yds. surface tarring, for U.D.C. Town Surveyor.

JUNE 5.

Cardiff.—Improvements.—For (1) improvement of Peterston-rd., near Molanga and Cnepyn, Parish of Peterston-super-Ely; (2) widening and improvement of St. Andrews-rd., Parish of St. Andrews Major; (3) providing and laying kerbing and forming footpath, Bronllwyn-rd., Parish of Pentyrch; (4) providing and laying approximately 150 lin. yds. of 2 in. and 1½ in. wrought iron water pipes with small collecting tanks and hand pump at Peterston-super-Ely, for R.D.C. W Farrow, E. and S., 20, Park-place.

Colwyn Bay.—Making-up.—Smith-av. and Holyrood-av., and relaying of short length of surface-water sewer in Holyrood-av., Old Colwyn, for U.D.C. W. J. Dunning, E. and S.

Dublin.—Roads.—Re-surfacing of roadways, for T.C. G. J. Sherlock, T.C.

East Sussex.—Reconstruction.—Also surfacing of parts of the county roads with concrete foundations surfaced with tarred macadam and kerbed, for C.C. H. E. Lunn, B.Sc., C.S. Dep. £10.

Helsworthy.—Pipes.—Supply and laying of about 818 ft. of 9-in. and 1,215 ft. of 6-in. stoneware socketed pipes for Trewyn area, for U.D.C. H. E. Cackett, S., Station-rd.

New Windsor.—Roadway.—400 yards of roadway footpaths, for T.C. E. A. Stickland, B.E., 16, Alma-rd. Dep. £2 2s.

Oldham.—Making-up.—Wilfred-st., Beatrice-st., Astbury-st., Juno-st., passage at gable of 2, Wilfred-st. and at rear of Moorhey-st., passage lying between Lees-rd. and Wilfred-st., passage at gable of 22, Wilfred-st., passage off Wilfred-st. lying between Moorhey-st. and Beatrice-st., passage off Wilfred-st. and at rear of Beatrice-st., for C.B. B.S. and E.

Plymouth.—Pipes.—1,500 yds. 9-in., 1,000 yds. 6-in. and 2,000 yds. of 4-in. cast-iron pipes, for Corporation. F. Howarth, Water Engineer.

Teddington.—Making-up.—Of Christchurch-av., for U.D.C. E. Bostock, S. Dep. £2 2s.

JUNE 6.

Bromley.—Sewer.—300 yds., in Chislehurst-rd., Orpington, for R.D.C. L. J. Small, E. Dep. £2 2s.

Carshalton.—Widening.—Also reconstruction of Nightingale-rd., together with surface-water drainage works comprising 24-in. and 30-in. concrete tube sewers, manholes, etc., for U.D.C. R. S. Davey, E. and S. Dep. £2.

Egham.—Resurfacing.—Of Wendover-rd., for U.D.C. R. I. Weymouth, E. and S. Dep. £2 2s.

Guildford.—Improvements.—Providing and fixing a corrugated iron fence and other minor works required in connection with an improvement to be carried out at Josephs-rd., for T.C. J. W. Hipwood, B.S.

Harrogate.—Excavating.—Also reinstatement of approximately 6 miles of trenching between Knaresborough and Borough-bridge, for Gas Co. F. H. Robinson, engineer and manager, 48, James-st., Harrogate.

Hove.—Making-up.—Princes-av. and Portland-rd. and Margery-rd., for T.C. B.S.

Llanfair.—Roads.—Construction of new lengths of roads for road widenings and improvements on sections of coastal and Newborough roads, for Anglesey C.C. W. E. Jones, C.S., Craig, Llanfair P.G. Dep. £3 3s.

London.—Making-up.—Of Bisson-rd. (part), Leggatt-rd., Claypole-rd., Gardner-rd., Fort-st. (part), Pirie-st., and laying of bituminous paving in Fort-st. (part), Pirie-st., for West Ham C.B. B.E. Dep. £1.

Maldon.—Extension.—15-in. diameter cast-iron main sewer outfall, for T.C. B.E.

Wembley.—Making-up.—Clarendon-gardens (part I.), approximate length 128 yds.; Wembley Park-rd., approximate length 97 yds.; The Dene (part I.), approximate length 36 yds., for U.D.C. C. W Chapman, E. and S. Dep. £1 1s. each.

JUNE 7.

Bucks.—Kerbing.—Kerbing, footpath, fencing and widening works on London-Bath-rd., between Slough and Maidenhead, for C.C. E. Winfield, C.S., Lloyds Bank-chambers, Aylesbury. Dep. £10.

Leeds.—Paving.—Flagging, kerbing, and tar paving of footpaths and tar macadamising carriageways in Estcourt-ter., back Estcourt-av., back Nunroyd-rd., Nunroyd-av., Nunroyd-ter., for T.C. E. W. Cockerlyne, Highways Engineer. Dep. £1 1s.

Leeds.—Paving, etc.—On various roads, for Corporation. Highways Engineer, 155, Kirkstall-rd.

London.—Sewer.—Construction of about 530 ft. of 4 ft. by 2 ft. 8 in. brick sewer beneath White-st. and Moorfields, for Corporation. City Engineer, Portland House, Basinghall-st., E.C.2. Dep. £2 2s.

Swansea.—Making-up.—Of (1) Queen's-rd., (2) Kingston-rd., (3) Tavistock-rd., (4) Clarendon-rd., for C.B. J. Richard Heath, B.E. and S.

Wanstead.—Making-up.—Of Bressey-grove (section I.), and also Wordsworth-av., with waterbound granite macadam tarsprayed, and tarpaved footways, for U.D.C. E. and S.

JUNE 8.

Barking.—Culvert.—Reinforced concrete culvert, including number of access manholes, and supply and erection of about 400 lin. yds. of wrought-iron railing, with entrance gates, for U.D.C. R. A. Lay, E. and S.

Mitcham.—Making-up.—Of Northborough-rd., for U.D.C. S.

JUNE 9.

Bexhill.—Sewer.—70 yds. of 9-in. pipe sewer in Gunter's-lane, for Corporation. B.S.

Kent.—Paving.—Kent ragstone tar paving manufacturers for supply and laying of new tar paving and for repairing existing tar paving at school premises throughout the County, for E.C. W. H. Robinson, F.R.I.B.A., Sessions House, Maidstone.

Thornton Cleveleys.—Making-up.—For (1) Manordrive (running from Rossall-rd. to Weeton-av.); (2) Beach-av. (running from Manor-drive to Beach-rd.); (3) Weeton-av. (running from Manor-drive to Beach-rd.); (4) back-st. between Manor-drive and Beach-rd. (running from Beach-av. to Beach-rd.); (5) St. George's-av.; (6) St. Andrew's-av.; (7) St. David's-av.; (8) Coronation-rd.; (9) King's-rd.; (10) Slater-rd.; (11) back-st. between Victoria-rd. and Coronation-rd. (running from Bispham-rd. to Slater-rd.); (12) back-st. between Victoria-rd. and Coronation-rd. (running from Slater-rd. to King's-rd.); (13) back-st. between Victoria-rd. and Coronation-rd. (running from King's-rd. to back-st. rear of Promenade), for U.D.C. H. Fenton, S.

JUNE 11.

Glasgow.—Widening.—Also reconstruction of about 1½ miles of existing road between Harthill and Polkemmet, to form part of new road from Glasgow to Edinburgh, for Corporation. D. A. Donald, engineer, 271, Alexandra-parade, Glasgow, E.1. Dep. £3 3s.

Howth.—Main.—Extension of 3-in. water main at Evora-ter., for U.D.C. T.C.

Rathmines and Rathgar.—Asphalting.—Laying in Trinidad asphalt of Harold's Cross-rd. from Harold's Cross Bridge to the Township Boundary, for U.D.C. S.

Southampton.—Making-up.—Chatsworth-rd., for C.B. B.E. Dep. £1 1s.

Tendring.—Making-up.—King's-av., Little Holland, nr. Clacton-on-Sea, for R.D.C. F. G. Vincent-Brown, S. Dep. £2.

JUNE 12.

Barnes.—Reconstruction.—Of High-st., Mortlake (part of), and Lonsdale-rd., Barnes (part of), for U.D.C. F. P. Kindell, E. and S. Dep. £2 2s.

Barnes.—Road.—Reinforced road foundation works, etc., Church-rd., for U.D.C. F. P. Kindell, E. and S. Dep. £2 2s.

***London.**—Roads, etc.—Pairing the carriageways and footways of various streets, with various materials for the Streets Committee of the Corporation of London. Office of the City Engineer, Portland House, Basinghall-st., E.C.2.

JUNE 13.

Birmingham.—Sewers.—1,010 yds. of brick and concrete and stoneware pipe sewers, together with manholes and other incidental works, between World's End-lane and Hagley-rd. West, Quinton, for T.C. H. H. Humphries, City E. and S. Dep. £2.

Middleton.—Street and Sewer Works.—Making and sewering, etc., of 4 streets in connection with Rhodes housing scheme, for the T.C. B.E., Town Hall, Middleton, Lancs.

Twickenham.—Improvements.—To King-st., for T.C. F. W. Pearce, B.E. and S. Dep. £2 2s.

JUNE 14.

East Ham.—Repairs.—Repairing and tar paving of playgrounds at Shrewsbury-rd. school, Forest Gate, High-st. school, East Ham, Dersingham school, Manor Park, Storey-st. school, North Woolwich, and the Technical College, for E.C. B.E. Dep. 10s

Reading.—Reconstruction.—Of Christchurch-rd. and Shinfield-rd., for C.B. B.S. Dep. £2 2s.

JUNE 15.

West Bromwich.—Repairs.—To roads at district schools, Wigmore, for Walsall and West Bromwich School District. A H. Ward, clerk, 22, Lambard-st.

Auction Sales, Tenders, etc.

JUNE 5.

Bucks.—F. H. Clark will sell on the site Addington Manor, Winslow, Bucks, without reserve, timber, fittings and building materials, arising from demolition of the above. Auctioneer, Addington Manor, Winslow, Bucks.

London.—Hampton & Sons, at St. James' Estate Rooms, 20, St. James'-sq., S.W.1 (unless previously sold), freehold building land, about 50 acres, at Horley, Surrey. Auctioneers, as above.

Tunbridge Wells.—Hampton & Sons, at 20, St. James's-sq., S.W.1, 2¼ acres freehold building land. Auctioneers, as above.

JUNE 7.

London.—Maple & Co., at the London Auction Mart, 155, Queen Victoria-st., E.C. Freehold property, "Fairfield House," Windmill-rd., Brentford. Auctioneers, Tottenham Court-rd., W.1.

JUNE 12.

Loudwater (Bucks).—Hampton & Sons, at 20, St. James's-sq., S.W.1, 69½ acres freehold building land. Auctioneers, as above.

JUNE 22.

***Ilford.**—John D. Wood and Co., and Kemsley, will sell as a whole or in three lots, at the London Auction Mart., 155, Queen Victoria-st., E.C.4., building estate, Mossford Green Farm and 27 cottages, Barkingside, Ilford, about 65 acres. Auctioneers, K., Broad-st. House, Old Broad-st., E.C.; J. D. W. and Co., 6, Mount-St., W.1.

JUNE 26.

Dorking.—Hampton & Sons, at 20, St. James's-sq., S.W.1, freehold, residential and building estate, "Sondes-place," over 29 acres. Vacant possession. Auctioneers, as above.

West Weybridge (Surrey).—Hampton & Sons, at 20, St. James's-sq., S.W.1, remaining portions of Wey Manor Estate, comprising 2 freehold building estates of about 33 and 138 acres respectively. Auctioneers, as above.

JUNE 27.

London.—John D. Wood & Co. & Kemsleys (acting in conjunction) at the London Auction Mart, 115, Queen Victoria-st., E.C.4, building estate, Mossford Green Farm, Barkingside, Essex, together with 27 cottages, farm house and premises. Auctioneers, K., Broad-st. House, E.C.2. J. D. W. & Co., 6, Mount-st., W.1.

JULY 3.

Near Ickenham.—Hampton & Sons, at 20, St. James's-sq., S.W.1, 4,000 feet freehold frontage land. Auctioneers, as above.

Public Appointments.

JUNE 4.

Sheffield.—Lecturer in Architecture required. W. M. Gibbons, Registrar, The University, Sheffield.

JUNE 6.

Essex.—Builder's Foreman (working) required at the London County Mental Hospital, Claybury Woodford Bridge, by the L.C.C. Acting Chief Officer, Mental Hospitals Dept., The County Hall, Westminster Bridge, S.E.1.

JUNE 8.

***Tottenham.**—Teacher for Practical Plumbing and Sanitary Science required by the Middlesex Education Committee at Tottenham Polytechnic. H. P. Shallard, Polytechnic, High-rd., Tottenham.

JUNE 9.

London.—Lecturers required in Sept. next at L.C.C. School of Building, Ferndale-rd., Brixton, S.W.4., for instruction in various subjects. Education Officer (T.1a), The County Hall, Westminster Bridge, S.E.1 (stamped addressed foolscap envelope necessary).

JUNE 11.

***Guildford.**—Clerk of Works on the proposed new public elementary school at Bellfields, by the E.C. The Sec., E.C., Park-st., Guildford.

***Southend-on-Sea.**—Architectural Assistant in the Borough Engineer's Dept. required by the C.B. Robert H. Dyer, B.E., Municipal Buildings.

JUNE 13.

***Brighton.**—Works Foreman and Superintendent.—Of workmen (including caretakers) for superintendence of repairs to school buildings required by the E.C. F. Herbert Toyne, sec., 54, Old Steine, Brighton.

JUNE 14.

***Southampton.**—Assistant Quantity Surveyor (Grade I.6) required in the County Architect's Department, by the C.C. A. L. Roberts, F.R.I.B.A., C.A., The Castle, Winchester.

JUNE 20.

London.—Assistant Surveyors required on the permanent pensionable establishment of the Works and Buildings Directorate, Air Ministry. Secretary, Air Ministry, Adastral House, Kingsway, W.C.2.

JULY 12.

London.—Assistant Examiners in the Patent Office. Forthcoming examinaiton. The Secretary, Civil Service Commission, Burlington-gardens, W.1.

Visit to Cement Works.

The members of the S.W. London Branch of the Surveyors' Institution were the guests of the Portland Cement Selling and Distributing Co., Ltd., on May 23, when a visit was paid to the company's works at Holborough. The visitors, on returning to London, were entertained to dinner at the Trocadero Restaurant, Piccadilly, where an address was given by Sir John Foster Fraser on "The New Architecture." The chairman, Mr. Henry S. Horne, introduced Sir John Foster Fraser, who in the course of his address gave a comparison of our roads, especially concrete roads, with those in other countries. Reference was also made by the speaker to the colouring of cement and its value to architecture. The manager of the company and the chairman of the South Western Branch of the Surveyors' Institution also spoke. A full description of the Holborough Cement works was given in our issue of May 11.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B. of E. for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board; Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

Atherstone.—Warwickshire E.C. are to proceed with new central school.

Baildon.—U.D.C. approved plans for 8 semi-detached houses Temple Rhydding Drive, and proposed bungalow at Maude-av., for J. H. Burniston.

Barnsley.—Plans passed by C.B. include extensions to Dominion Works, Summer-lane, for Qualter Hall & Co.—Barnsley Wesleyan Circuit are to erect a Church on Corporation site.

Battle.—Plans been prepared for rebuilding "United Friends" public-house at Winfield. Architect, H. Ward, Bank-chambers, Hastings.

Beccles.—T.C. received M.H. sanction to borrowing of £670 for purchase of land and erection of public convenience.

Berwick.—With view of helping to solve Berwick's housing problem and in commemoration of great event in Berwick's history—opening by Prince of Wales of Royal Tweed Bridge, W. H. Askew of Ladykirk made gift to town of 6 blocks of houses, to comprise 4 flats in each block, to be erected on a site at Billendean-rd., Tweedmouth.

Birmingham.—Mr. Hurlev Robinson, F.R.I.B.A., of 174, Corporation-st., plans a super cinema on the corner of Coleshill-rd. and Stechford-lane, Washwood-heath. The house will be named the "Metropolitan."—New licensed premises are to be built at junction of Hazelwell, Fordrough and Pineapple-rds., for Mitchells and Butlers, Ltd., of Cape Hill Brewery, Birmingham. Plans by Bateman & Bateman, architects, Bennett's-hill, Birmingham.

Blackpool.—Committee of Blackpool Central Working Men's Club, Revoe, are to improve their buildings.—Highfield Wesleyan Church, Blackpool, have acquired a site at Highfield-av. for church for 300. Plans by Potts & Hennings, FF.R.I.B.A., architects, 34, Victoria-buildings, Victoria-st., Manchester.

Bolton.—Wynne Thomas & Button, L.R.I.B.A., 25, Mount-st., plan bank at the corner of Deansgate and Howell's Croft, for Lloyds Bank.—Rev. F. W. Kershaw Somerville, of Wigan-rd., proposes school for 200, for the Church of St. Ethelbert, Hawthorne-st., Deane, Bolton. Plans by John Baxendale, architect, 33, Penarth-rd., Bolton.—Barlow & Jones, Ltd., spinners and manufacturers, Higher Bridge-st., propose additional mill premises at Cobden Mills, Halliwell-rd. Bradshaw, Gass & Hope, FF.R.I.B.A., 19, Silverwell-st., Bolton, have plans in hand.—For £15,000 Church of St. Bede at Norris Green, Bolton, F. R. Freeman, L.R.I.B.A., 21, Wood-st., has prepared the plans.—Bradshaw, Gass & Hope, 19, Silverwell-st., Bolton, plan nursing home at Heaton, for Board of Management of Bolton Infirmary.

Bolton.—Markets Committee gave general approval to plans prepared by B.E. for buildings on new market site, and instructed him to prepare detailed plans.

Bradford.—Chas. Hall, L.R.I.B.A., Exchange-chambers, 7, Queen-s-gate, plans improvements to Norristhorpe Church.—St. Mary's Roman Catholic School propose schools at Ashfield, Pagley-rd., Eccleshill. Architects are Edward Simpson & Son, 12, Cunliffe-terr., Manningham.

Bradford.—Greenhill Wesleyan Sunday School, Bradford, is to be replaced by building at £6,700.

Brighton.—Governors of Brighton School for Blind Boys propose to build additional premises to provide recreation rooms, etc. Architect, H. T. Cawthorn, 179, North-st.

Bromley.—T.C. passed plans:—2 houses, Avondale-rd., A. Frampton; 4 shops, Beckenham-lane, A. Frampton.

Cardiff.—Tramways Committee decided to erect shelters at Kingsway and Westgate-st.

Chiswick.—Additional public slipper baths for Brentford and Chiswick will cost £5,495.

Cleveleys.—Erection of Wesleyan Church, estimated to cost about £5,000. Plans by Lumb & Walton, architects, Clifton-st., Blackpool.

Consett.—It is proposed to erect new school for parishes of Consett, Knitsley, and Healeyfield, to accommodate 120 children, on Grove estate at Consett.

Cuddington.—Colonel and Mrs F. T. Higgins Bernard, of Nether Winchendon Priory, Bucks, have decided to present a village hall to the parish of Cuddington.

Eastbourne.—A tender of £34,975 to rebuild All Saints Church, been accepted.

Edmonton.—Plans passed:—C. W. Dennis, warehouse and offices, Chichester-rd.; G. Pulford, 5 houses, Church-st., by Ruby Villas; F. J. Lawes, 7 houses and garage, Church-st., by Ruby Villas.

Exeter.—T.C. are trying to acquire site at Fairfield for erection of school.

Farnham.—Bourne Council School premises are to be improved by Surrey E.C., at £1,370.

Fleetwood.—M.H. sanctioned application from Council for 12 parlour type houses on Warren Farm estate.

Frimley.—Surrey E.C. given instructions to architects to prepare sketch plans for mixed secondary school for 200 pupils and capable of extension.

Gillingham.—Swimming bath is to be built at County School for Boys.

Godalming.—Plans for erection of proposed secondary school at estimated cost of £51,600 have been approved by B. of E. Work is for Surrey E.C.

Guildford.—Extension of Technical Institute is being considered.

Gunnersbury.—Kensington B.C. are to sell 22 housing sites adjoining their Gunnersbury cemetery.

Harrogate.—Wesleyan authorities acquired site at Kettlesing for Church. Plans by J. W. Knowles, surveyor, Bull-bridge, Accrington.

Hendon.—U.D.C. received M.H. assent to proposal to spend £500 on extending Child Welfare Centre at Burroughs House, Hendon.—Council are to consider provision of day nursery on Watling Estate. Offer of a site on estate for a child welfare centre for £625 had been provisionally accepted.

Heston and Isleworth.—U.D.C. passed plans:—Roper, Son & Chapman, 3 shops and garage with living accommodation over, Hanworth-rd.; P. Chase Gardener & Co., 5 shops, Kingsley-rd.; P. Chase Gardener & Co., 4 houses, Jersey-rd.; A. C. Cutler, 5 houses, Lampton-rd.; W. Brereton, 4 houses, Great West-rd.; W. J. Harris, 8 garages, Worton-way and The Drive.

Hexham.—U.D.C. decided that necessary plans and estimates be prepared for utilisation of Hexham House as offices.

Heywood.—M.H. given Corporation sanction to erection of 28 additional houses on land in Egerton-st.

Hook.—Site been bought by Hodgson's Kingston Brewery Co., Ltd., for public-house. Architects, Yetts, Sturdy & Usher and J. Hill, FF.R.I.B.A., 34, Gordon-sq.

Houghton-le-Spring.—Question of providing subway at Fence Houses Station level-crossing been considered by representatives of Houghton-le-Spring R.D.C., Chester-le-Street R.D.C., Houghton-le-Spring U.D.C., and Durham C.C. Plans been exhibited by W. J. Merrett, C.S., who states estimated cost is £56,000.

Hull.—Corporation Housing Committee propose, if land can be acquired, to build blocks of flats at different points in city. Land selected and proposals are: land at corner of Southcoates-lane and Hedon-rd., 180 3-story tenement flats; land at corner of Madeley-st. and Goulton-st., 54 similar tenement flats; and land Barnsley-st., 325 tenement flats.

Ilford.—T.C. passed plans:—W. Longworth & Co., 6 houses, 2a/12a, Christchurch-rd.; J. W. Lohden, 4 houses, 87/93, Woodford-av.; C. J. Dawson, Son & Allardyce, offices for Brook Bros., Roden-st.; Ullyetts Estates Co., 6 houses, 15/25, Hamilton-av.; A. P. Griggs, 9 houses, 2/14, Rochester-gardens, and 117/119, The Drive; R. Stroud, 8 houses, 18/32, Merton-rd.; Brand & White, Ltd., amended plan of houses 17/41, and additional house, 43, Derwent-gardens; A. P. Griggs, 6 houses and garages, 51/61, Exeter-gardens, and 2 garages rear of 61, Exeter-gardens; P. Triplete, 6 shops and dwellings, 1/6, Clifton-parade, Ley-st.

Irlam.—Royles, Ltd., engineers, proposing to make extensions to works. Plans by C. S. Allott & Son, consulting engineers, 1, North-parade, Parsonage, Manchester.

Kingston-on-Thames.—T. C. decided to erect, subject to official sanction, a further 60 houses in addition to the 120 for which tender been accepted.—Town Clerk reported receipt of sanction of M.H. to borrowing £43,800 in connection with proposed erection of 120 further houses.

Kinston.—School to be erected at Ensbury Park, for Dorset E.C.

Lindsey.—Assembly hall is to be erected at Barton Health Clinic, for C.C.

Little Bookham.—M.H. raised no objection to acceptance by Council of tender of W. J. Drowley for erection of 10 cottages at Station-rd. site. Application is to be made for sanction to borrow £4,679.

Littleborough.—J. Grimshaw, Ltd., brewers, Kirby Brewery, Burnley, proposing to make improvements to "Dyers Arms." Plans by Hitchon & Pickup, architects, 46, Manchester-rd., Burnley.

London (Lambeth).—B.C. recommend that application be made to M.H. for sanction to loan of £3,950, for construction of an underground convenience at Upper Norwood.

Luton.—M.H. approved proposals by T.C. for provision of smallpox hospital, and B.E. is to invite tenders for the work.—Council approved, subject to B. of E., for installation of central heating system to replace open fires in Chapel-st. school. The estimated cost is £600, and application is to be made to M.H. for sanction.

Manchester.—G. F. Darbyshire, builder, 21a, New Cannon-st., is to erect 180 houses and 8 shops at Kingsway, Levenshulme, Manchester. Plans by F. C. Larmuth, 23, King-st.—P. Cohen, 42, Clarence-st., Cheetham, is proposing to make extensions to works by erection of factory at junction of Southall-st. and Clarence-st. Plans by Flitcroft, "Hillcrest," Walkden-rd., Worsley, near Manchester.

Manchester.—W. Ellis, architect, Deansgate, preparing plans for alterations to church schools at Cheetham-hill-rd.

Mansfield.—T.C. passed plans:—Quortex, Ltd., extension to factory, Sutton-rd.; J. H. Wightman, 3 houses, Bottle-lane.

Middlesbrough.—Corporation Sanitary Committee decided to proceed with conversion of Cannon Police Station into public baths. Scheme provided for 9 slipper baths, and cost estimated by B.E. at £660.

Mitcham.—U.D.C. passed plans:—Wates, Ltd., 2 lock-up shops, 2 w.c.s, and 18 lock-up garages, Galpins-rd.; T. Wise, 4 houses, Wilton-rd.; E. J. Peacock, 46, Queen's-rd., S.W.11, lay-out of 13 houses and new road, Streatham-rd.; Young & Co. Brewery, Ltd., alterations to "Cricketers," London-rd.; Ranelagh Dye Works, Ltd., factory buildings and latrines, Western-rd.; Wates, Ltd., lay-out of 10 houses, Spencer-rd., and 4 houses, Grove-rd.; I. Wilson, "The Cedars," Mitcham Common, 19 houses and shops, Commonside West.

Nelson.—Co-operative and Industrial Society, Ltd., 1, Cross-st., acquired site on Parkside-rd., Marsden Park estate, for branch stores and 3 semi-bungalows. E. J. Crabtree, A.M.S.A., Permanent-chambers, Victoria-st, architect.

Newark.—U.D.C. passed plans:—Hotter & Son, 30 houses, Gilstrap Park estate; and J. R. Vickers, 20 houses, off Boundary-rd.

Northampton.—Rebuilding of the "Red House" public-house at Weedon-rd. is proposed by P. Phipps & Co., Ltd., brewers, 8, Gold-st. Architect, H. J. Gayton, York-rd.

Northampton.—M.H. held inquiry into application of C.C. to borrow £22,000 for provision of additional public office accommodation at County Buildings.

Oldham.—For Primitive Methodist Church at Healds-green, Chadderton, the architects are C. T. Taylor Roberts & Bowman, A. & L.R.I.B.A., 10, Clegg-st.

Ramsgate.—Corporation is applying for a loan of £15,000 for gasworks improvements.

Riddlesden.—Alterations and additions are proposed at National School, Bank-st. Cost £3,000. Architects, Moore & Crabtree, Bradford.

Romford.—Plans for proposed Lord Lamborne Masonic Hall been prepared by Harrington & Evans, South-st.

Rugby.—Governors of St. Cross Hospital proposing to carry out scheme of extensions at hospital.

St. Helen's.—Gray & Evans, architects, 51, North John-st., Liverpool, are preparing plans for a super cinema and shops on junction of North-rd. and Duke-st.

Scarborough.—Electricity Committee propose to adapt premises at 89 and 89a, Westborough, for electricity showrooms.

Sheffield.—Centenary Fund being raised by parishioners of St. Phillip's Church, Upperthorpe, for repairs and alterations to edifice estimated to cost £2,000. Plans by H. J. Stevens, Temple-chambers, 13, Fig Tree-lane.

Sheffield.—Purchasers of South-st. United Methodist Chapel, are Marks & Spencer, Ltd., who propose to erect bazaar.

Staines.—M.H. sanctioned 24 houses at Hallington by R.D.C.—Plans passed:—Lightwood Building Co., 44 houses, Zealand-av., Hatch-lane, Harmondsworth; W. Varney, 8 cottages, Ashford-cres., Ashford.

Southgate.—U.D.C. passed plans:—A. E. Little, 8 houses, Queen Elizabeth-drive; T. A. Rainbow, 15 garages, rear of 77, Chase Side; C. E. Hartshorne, 4 houses, Broomfield-av.; P. J. Murden, 10 houses, North Circular-rd.; A. H. Bate, 10 houses, Wynchgate; National Dry Cleaners (1927), Ltd., pavilion and carpet drying room, North Circular-rd.; Mattock Bros., 5 shops, Cannon-hill; C. S. Brown, 22 houses, North Circular-rd., Rowes-rd.

Sutton Coldfield.—Extensions proposed at Police Court, for Warwickshire C.C.

Swindon.—Provincial Cinematograph Theatres, Ltd., 123, Regent-st., W.1, acquiring site in centre of town for new picture theatre. Plans by Wm. E. Trent, F.S.I.

Tarleton.—Lancashire Elementary Education Subcommittee resolved to ask C.C. to authorise that application be made to M.H. for sanction to loan of £13,635, for council school.

Thorpe Bay.—Preliminary plans been approved for Church of St. Augustine's. Architects, C. J. Dawson & Son, and Allardyce, Barking.

Tottenham.—U.D.C. passed plans:—Additions to Salvation Army hall, Terront-rd.; 29 houses, Walpole and Cambridge-rds. (W. H. Upson); 29 houses, Downhills Park-rd. (W. Tout); 7 houses and shop, Rosebery-av. (R. J. Rowley); 41 houses, Higham-rd. and 6 in Downhills Park-rd. (Rowley Bros.).

Walthamstow.—Plans approved by U.D.C.:—6 garages, 270, Wood-st., F. C. Vince; 7 houses, St. John's-rd., W. Penfold; 10 houses, Chingford-rd., E. W. Baker; 3 shop dwellings, corner High-st. and Willow-walk, Moore & Dartnall; factory extension, Clifford-rd., Wallis, Gilbert & Partners; 6 houses, Byron-rd., J. W. Warboys; factory, Chingford-rd., W. Farrington.

Worthing.—T.C. passed plans:—8 houses, Pevensey-rd., W. C. Butler, per H. M. Potter; 17 houses, Westcourt-rd., Worthing Estates Building Co., Ltd., per F. G. Abell; addition to Holy Trinity Parish Hall, Crescent-rd., Vicar and Churchwardens, per T. R. Hyde.

* See also our List of Contracts, Competitions, etc.

TRADE NEWS

Keeping Accurate Time in Valparaiso.

One of the residents of Valparaiso, realising how very important it is for the business and social life of a city that accurate time should be kept, is presenting to his fellow citizens a 4-ft., four-face "Pul-syn-etic" electric clock fitted with striking apparatus. It is placed in the central square of the city, on a handsome 30 ft. standard, quite close to the railway station and commanding a very good view. Connected electrically to this clock is a 1-h.p. electro motor syren, which by means of a contact-maker in the time circuit, sounds automatically at 12 o'clock every day, and by this syren public and business-house clocks all over the city can be kept to uniform and correct time. The master clock itself is placed in the donor's private house, and with this a model time-ball which is operated by the local observatory so that the master clock is checked to the second when necessary. The whole apparatus has been manufactured entirely by Messrs. Gent & Co., Ltd., Leicester, England.

Fitting a Rural Highway for Modern Traffic.

The Eastleigh—Fair Oak—Upham-road highway is an interesting example of a rural traffic-route which has been remodelled on effective and yet economical lines. The road surface was originally of waterbound granite on a subsoil of clay and running sand. This construction, however, has of late proved to be totally unfitted for the heavy motor traffic which has sprung up as a natural result of extensive commercial developments in the area in question. The authority concerned—the Winchester R.D.C. (Engineer and Surveyor: Mr. George E. Carter, M.Inst.M. & Cy.E.)—therefore decided upon thoroughgoing reconstruction on a direct labour basis. Briefly, the added widths of carriageway, together with portions of the original road, were strengthened with reinforced concrete, and the whole resurfaced with Messrs. Wm. Shepherd & Sons', Ltd., graded "Asphaltic Slag." A footpath and concrete kerb were also constructed. The all-important matter of drainage was placed on a sound basis at the outset by the inclusion of a special storm-water drain—provided with concrete sides and pipes where running sands were encountered. The provision of this drain, it should be mentioned, was rendered necessary by the fact that immediately following heavy rainfalls the road surface in the past has invariably been seriously flooded.

"Weather conditions during the course of the reconstruction and since its completion have been distinctly unfavourable; in spite of this, however, the road is in excellent condition, and is standing up to an ever-growing volume of traffic in a satisfactory fashion," says a recent official report.

"Firm Foundations."

Under this title the British Steel Piling Co., Ltd., of 54a, Parliament-street, S.W.1, have published a booklet which gives details of their patented system of casting concrete piles *in situ*. Piles have been made with this system up to 97 ft. long, and the company are now experimenting with a system of extension pieces that will enable piles to be made up to almost any length all in one piece and without the aid of pilot piles. The system is now being developed for smaller piles carrying comparatively small loads and using a 12-in. tube for making a pile 13 in. finished diameter. To all those having foundation problems to deal with, a technical department is entirely at their service for the preparation of schemes and lay-outs for the use of the system on the most economical basis. The system in use can also be seen at any time. Among the many contracts being fulfilled all over the world, "Vibro" piles have been used for the foundations of the Underground Electric Railway's new building at St. James's Park.

NEW COMPANIES

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 & 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

W. E. GARDINER & CO., LTD. (229,303). Registered March 30. 104, High Holborn, W.C.1. Building contractors, etc. Nominal capital, £500.

HOMEMAKERS (BILLERICAY), LTD. (229,282). Registered March 30. Station-approach, Billericay, Essex. To acquire certain properties at East Burstead, Essex, and to carry on the business of builders, decorators, plumbers, etc. Nominal capital, £2,000.

H. FISHER & SONS, LTD. (229,280). Registered March 30. Grossways-street, Barry Dock. Builders and contractors. Nominal capital, £3,000.

TILES SUPPLIES, LTD. (229,256). Registered March 29. Chandos House, Buckingham-gate, Victoria-street, S.W.1. Tile, pipe and pottery dealers and agents, etc. Nominal capital, £100.

W. P. JOHNSON & CO., LTD. (229,332). Registered March 31. Market Chambers, 77-79, High-street, Watford. Monumental and general masons, etc. Nominal capital, £100.

WILLIAM FREER, LTD. (229,334). Registered March 31. Heating and domestic engineer, etc. 36, 38, and 40, Wellington-street, Leicester. Nominal capital, £25,000.

VIVIAN PENDLETON, LTD. (229,329). Registered March 31. Catherine-street, Strangeways, Manchester. Builders' merchant. Nominal capital, £2,000.

W. H. PRATT, LTD. (229,364). Registered April 2. 20 and 22, Maddox-street, W.1. Builder and decorator. Nominal capital, £1,000.

SAMUEL HARRISON & SON, LTD. (229,363). Registered April 2. Stained glass artists and manufacturers of or dealers in leaded lights. Nominal capital, £1,000.

TEALE FIREPLACE CO., (LONDON), LTD. (229,402). Registered April 2. Builders' merchant. Nominal capital, £4,000.

G. H. YOUNG, LTD. (229,375). Registered April 2. Monumental sculptors and stonemasons, etc. Nominal capital, £2,000.

Travelling Radiator Exhibit.

The motor travelling caravan fitted with a working "Ideal Cookanheat" installation, and put on the road by the National Radiator Co., Ltd., of Hull, will demonstrate on June 5-7 at Stand 152, the Three Counties Agricultural Show, Hereford.

ESTIMATING ON RIGHT LINES

Everyone whose business it is to quote for building work should master the principles upon which estimating is based. These principles are clearly explained and illustrated in

'HOW TO ESTIMATE'

by J. T. REA,

a unique and invaluable work which is not excelled in thoroughness or in scope by any similar book known.

Fourth edition (now ready). 540 pages. Price 15s. net (by post 15s. 9d.). Containing thousands of prices and hundreds of examples of analysis, showing how a builder can make up rates for himself. In view of the difficulty of fixing standard prices under present conditions, the author has included an important series of Adaptation Tables and Percentages *which show how rates may be adjusted to meet variations at any time.*

Before purchasing any other book on this vitally important subject, you are invited to inspect this—the standard work which is in use by over 30,000 builders.

A Copy will be sent by return, and your Remittance refunded if the Book does : : not satisfy your requirements : :

B. T. BATSFORD, LTD.
Publishers, 94 High Holborn, London, W.C.

PATENTS

APPLICATIONS PUBLISHED.*

281,855.—J. Mills & Co. (Engineers), Ltd., M. W. Mills, and J. F. Bolton: Pen-stock or adjustable sluice or fluid-control structure for sewage channels and waterways.

265,165.—Soc. Française Radio Electrique: Girder masts.

281,885.—A. Pahl: Process and apparatus for the production of molten liquid, coats of enamel, glass, and the like by spraying.

281,889.—Chittenden & Simmons, Ltd., and W. B. Gunnell: Concrete-mixers.

281,898.—J. Pickles & Son (Engineers), Ltd., and H. Pickles: Mounting of cutter-blocks in woodworking-machines.

281,929.—F. G. Gibb: Erection of harbour-works, breakwaters, quays, pierheads and like purposes, and the construction of caissons for use therewith.

281,969.—T. Neilson and J. Marshall: Ventilating-apparatus.

282,122.—M. C. M. O'Brien: Safes, strong-rooms and vaults.

258,597.—Naamlooze Vennootschap Continentale Handel en Transport Maatschappij. Method and means for the loading and stowage of briquettes, bricks and blocks.

282,202.—G. McNeal: Roofings for buildings.

282,206.—G. J. Cragg: Clamping or binding appliances for the shuttering employed in casting concrete columns or pillars *in situ*.

282,226.—Chubb & Son's Lock and Safe Co., Ltd., and H. S. Ball: Reinforcement of concrete structures.

282,280.—E. Richards: Brackets for supporting gutters.

282,289.—D. J. Thomas and J. Thomas: Water-supply systems for domestic and like uses.

272,959.—Nordon Frères: Pipe joints.

283,998.—W. T. Branscombe and R. C. L. Eveleigh: Primings, varnishes and paint vehicles, and the manufacture thereof.

272,153.—W. & J. Sloane Manufacturing Co.: Ornamental surface coverings.

284,381.—Pool Lorrimer & Tabberer, Ltd., S. O'Brien and W. Breach: Locking means for hoists and lifts.

273,646.—A. Sievers and H. Gralle: Cranes for handling timber.

284,436.—A. Drew: Ladders.

284,454.—H. A. Pyrah: Means for heating and ventilating rooms.

284,479.—A. W. Coveney: Moulding concrete under vibration.

284,488.—G. Tasman: Carpenters' joints.

284,494.—Vickers, Ltd., and L. D. Parker: Rotary kilns for burning cement.

284,503.—E. Hoffmann: Reinforced-concrete structures.

284,506.—F. Sporleder: Hand apparatus for removing old wall colourings and paintings.

284,510.—E. P. S. Cattle: Composite device or fixture for lighting and air-circulating purposes.

284,511.—A. A. Greenslade and E. A. & W. Greenslade: Painters', decorators' and like brushes.

284,517.—F. S. Sumpter: Glazed-tile mantels and surrounds for fireplaces.

284,518.—J. R. Freeze: Manufacture of spiral metal pipes.

274,452.—H. Junkers: Construction of roofs, walls and floors.

276,975.—H. Richner: Taps or cocks.

284,563.—Triplex Foundry, Ltd., and C. R. Horrell: Firegrates.

284,564.—Scaffolding (Great Britain), Ltd., and D. Palmer-Jones: Telescopically-adjustable props, shores or struts.

284,570.—Aktieselskabet Pedershaab Cementindustri: Machines for ramming pavements.

282,470.—L. Schmid, L. Schmid, jun., and F. Schmid: Portable mixer for concrete.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

PRICES CURRENT OF MATERIALS.*

Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 5 6
Second Hard Stocks	3 19 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at King's Cross	2 12 3	Best Blue Pressed Staffs	9 5 0
Do., grooved for Plaster ...	2 14 3	Do. Bullnose ...	9 15 0
Do., Bullnose...	3 6 3	Blue Wire Cuts	7 5 0

Best Stourbridge Fire Brick :—

2½ in.	8 11 0	3 in.	10 3 0

Glazed Bricks—

Best White Ivory, and Salt Glazed Stretchers ...	21 0 0	D'ble Str'tch'rs	29 10 0		
		D'ble Headers...	26 10 0		
Headers	20 10 0	One Side and two Ends ...	30 10 0		
Quoins, Bullnose and 4½ in. Flats	27 10 0	Two Sides and one End	31 10 0		
		Splays, and Squints	28 0 0		

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super.	1 11	3 in per yd. super	2 9
2½ in. ,, ,,	2 4	4 in. ,, ,,	3 6

	s. d.	
Thames Ballast	10 6	per yd. delivered 2 miles radius Paddington.
Pit Sand	13 9	,, ,,
Thames Sand	14 6	,, ,,
Best Washed Sand.....	14 6	,, ,,
½ in. Shingle for Ferro-Concrete	12 9	,, ,,
¼ in.	14 0	,, ,,
¾ in. Broken Brick.....	11 6	,, ,,
Pan Breeze	8 0	,, ,,

Per ton delivered in London area in full van loads.

Best Portland Cement. British.

Standard Specification. Test £2 13 0 to £2 15 0 46s. alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	0 10 0
Super Cement (Waterproof)	4 3 0
Roman Cement	8 15 0
Parian Cement.....	5 15 0
Keene's Cement, White	5 15 0
,, ,, Pink.....	5 10 0
Plaster, Coarse, Pink	3 0 0
,, ,, White	3 12 6
,, Fine	5 12 0
Sirapite, Coarse	3 9 0
,, Finish	3 17 0
Grey Stone Lime.....	2 10 9
Chalk Lime	2 10 9
Best Ground Blue Lias Lime	1 17 6
Hair ..... per cwt.	2 2 6
Granite Chippings	1 12 0

Note.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in s'cks 37s. 0d. per ton at rly. dp.

STONE.

Bath Stone.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	s. d. 2 10
Beer Stone—Random Block—	
Free on rail at Seaton Station, per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. per ft. cube	3 1½
Selected approximate size one way, 1d. per cubic foot extra; selected approximately three sizes or for special work, 3d. per cubic foot extra.	
Portland Stone.—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube.....	4 4½
Do. do. delivered on road wagons at above stations, per ft. cube.....	4 5½
White basebed, 3d. per ft. cube extra.	
Note.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ¼d. beyond 30 ft.	
Hopton-Wood Stone.—	
Delivered at any Goods Station, London.	s. d.
Random blocks from 10 ft. and over P. ft. cb.	17 0
Sawn two sides ..... ,,	27 0
Sawn three or four sides ..... ,,	32 0
York Stone, Blue—*Robin Hood Quality.*	
Delivered at any Goods Station, London.	
6 in . sawn two sides landings to sizes (under 30 ft. super).....Per ft. super	5 6
6 in. rubbed two sides, ditto ..... ,,	6 0
3 in. sawn two sides slabs (random sizes) ,,	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... ,,	1 6½
1½ in. to 2 in. ditto, ditto ..... ,,	1 3½
Hard York—	
Delivered at any Goods Station, London.	
Scappled random blocks ..... Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) ..... Per ft. super	5 1½
6 in. rubbed two sides, ditto ..... ,,	6 1½
4 in. sawn two sides slabs (random sizes) ,,	2 1½
3 in. ditto ditto ,,	2 10
2 in. self-faced random flags.....Per yd. super	8 8

CAST STONE.

Delivered in London area in full van loads, per ft. cube : Plain, 8s. 6d. ; Moulded, 9s. 6d. ; Cills, 10s.0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£30 0	3 × 6	£21 0
4 × 9	26 0	3 × 11	25 0
4 × 8	25 0	2 × 11	26 0
4 × 7	23 0	3 × 9	24 0
3 × 8	22 0	2½ × 9	24 0
3 × 7	22 0	3 × 4½.....	21 0
2½ × 7	21 0	3 × 4	21 0

PLANED BOARDS.

1 × 11	£30 0
1 × 9	£28 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
⅝.....	18/-	1½.....	30/-
¾.....	21/-	1¾.....	34/-
1	24/-		

TONGUED AND GROOVED FLOORING

Inches.	per sq.
1	24/-
1¼.....	30/-
1½.....	34/-

Ins. BATTENS.	s. d.
⅝×2.....per 100 ft.	2 6

MATCHING (BEST).

Inches.	per sq.
⅝.....	16/6
¾.....	19/-
1	24/-

SAWN LATHS.	s. d.
Per bundle	2 6

1" AND UP THICK.

	£ s. d.	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 16 0	to 0 18 0
Dry American and/or Japanese Figured Oak, ft. cube.....	0 14 0	to 0 15 0
Dry American and/or Japanese Plain Oak, ft. cube	0 10 0	to 0 13 0
Dry sq. edged Honduras Mahogany, ft. cube.....	0 15 0	to 0 18 0
Dry Log cut Honduras Mahogany, ft. cube.....	0 16 0	to 1 1 0
Dry Cuba Mahogany, ft. cube...	1 1 0	to 1 10 0
Dry Teak, ft. cube	0 13 0	to 0 15 0
Dry American Whitewood, ft. cube	0 10 0	to 0 14 0
Best Scotch Glue, per cwt.	4 10 0	to —
Liquid Glue, per cwt.	4 7 0	to 5 10 0

SLATES.

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000.

	£ s. d.		£ s. d.
24 by 12	32 18 4	18 by 10	18 12 11
22 by 12	29 17 11	18 by 9	16 9 2
22 by 11	27 14 2	16 by 10	15 12 6
20 by 12	26 5 0	16 by 8	12 3 9
20 by 10	22 10 0		

TILES.

Delivered at London rate stations in full truckloads of not less than 6 tons.

	Per 1,000. f.o.r. London.
Best machine-made tiles from Broseley or Staffordshire district.....	5 7 6
ditto hand-made ditto	5 17 6
Ornamental ditto	6 2 6
Hip and valley tiles (per dozen) { Hand-made	0 9 6
{ Machine-made	0 9 0

METALS.

Joists, Girders, &c., to London Station, per Ton—	£ s. d.
R.S. Joists, cut and fitted	12 10 0
Plain Compound Girders	14 10 0
,, ,, Stanchions	16 10 0
,, In Roof Work	19 10 0

Mild Steel Rounds.—To London Station, per ton

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	12 0 0	⅝ in. to ¼ in.	10 15 0
⅜ in.	11 0 0	⅝ in. to 2½ in.	10 10 0

Wrought-Iron Tubes and Fittings—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Tubes. Wrought Mild Steel.	Genuine Staffs. Iron.	Fittings. ½ in. and under.	Over ½ in.	Flanges. ½ in. and under.	Over ½ in.
	%	%	%	%	%	%
Gas	67½	50	42½	45	52½	55
Water	63½	46½	37½	40	47½	50
Steam	60	42½	32½	35	42½	45
Galv. gas.....	55	37½	32½	35	42½	45
Galv. water	50	32½	27½	30	37½	40
Galv. steam	45	27½	22½	25	32½	35

C.I.—Half-Round Gutters—London Prices ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3½	11½d.	3½d.
3½ in.	1/4½	1/1½	3½d.
4 in.	1/6	1/3	3½d.
4½ in.	1/7½	1/4½	4½d.
5 in.	1/10½	1/6½	5½d.

O.G. Gutters.

3 in.	1/8	1/4½	3½d.
3½ in.	1/8	1/4½	3½d.
4 in.	1/9½	1/4½	3½d.
4½ in.	1/11½	1/7½	4½d.
5 in.	2/4½	1/10½	5½d.

Rain-Water Pipes, &c.

Per yd. in 6 ft.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain.....	1/10½	1/3	1/9½
2½ in. ,, ...	2/0½	1/4½	2/1½
3 in. ,, ...	2/6	1/9	2/7½
3½ in. ,, ...	2/11½	2/0½	3/0½
4 in. ,, ...	3/5	2/6½	3/8½

L.C.C. Coated Soil Pipes—London Prices ex Works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts. plain	3 3	2 4½	2 10
2½ in. ,,	3 9	2 7½	3 7
3 in. ,,	4 6	2 10	4 2½
3½ in. ,,	4 11½	3 7	4 11½
4 in. ,,	5 5½	4 0½	5 9

L.C.C. Coated Drain Pipes—London Prices ex Works

	Pipe, angles, stock angles.	Bends, stock Branches.	
	s. d.	s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 4	5 1	8 0½
4 in. ,, ,,	6 2	5 8	10 0
5 in. ,, ,,	7 2	10 10	17 1
6 in. ,, ,,	8 6	13 2	21 9

Gasken for jointing, 38/6 per cwt.

	Per ton in London. £ s. d.		£ s. d.
Iron—			
Common bars.....	13 0 0	to	14 10 0
Staffordshire Crown Bars— Good merchant quality	14 5 0	to	15 15 0
Staffordshire Marked Bars.....	16 5 0	...	17 5 0
Mild Steel Bars	10 0 0	...	11 0 0
Steel Bars, Ferro-Concrete quality, basis price	10 0 0	...	11 0 0
Hoop iron, basis price	12 0 0	...	13 0 0
,, Galvanised	27 0 0	...	28 0 0
Soft Steel Sheets, Black— Ordinary sizes, to 20 g....	13 5 0	...	14 5 0
,, ,, ,, 24 g....	14 5 0	...	15 5 0
,, ,, ,, 26 g....	16 5 0	...	17 5 0
Sheets Flat Best Soft Steel, C.R. and C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 10 0	...	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.....	16 10 0	...	17 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g....	18 10 0	...	20 10 0
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 0 0	...	19 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	18 10 0	...	19 10 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	21 10 0	...	22 10 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22 0 0	...	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 0 0	...	26 0 0
Best Soft Steel Sheets, 26 g.	25 10 0	...	26 10 0
Cut Nails, 3 in. to 6 in.....	19 0 0		

(Under 3 in. usual trade extras.)

Metal Windows.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
Lead—Sheet, English, 4 lb. and up	28 10 0
Pipe in coils	29 0 0
Soil pipe	32 0 0
Compo pipe	33 0 0

Note.—Country delivery, 20s. per ton extra; lots under 3 cwt. 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 5s. cwt. extra.

Oil lead, ex London area, at Mills ..... per ton	18 15 0

COPPER.

	s. d.
Seamless Copper tubes (basis).....per lb.	1 1
Strong sheet ..... ,,	1 0
Thin..... ,,	1 1
Copper nails ..... ,,	2 3
Copper wire ..... ,,	2 4

PLUMBERS' BRASS WORK.

Delivered in London.

New River Pattern Screw Down Bib Cocks for Iron.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

New River Pattern Screw Down Stop Cocks and Unions.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

River Pattern Screw Down Main Ferrules.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

Caps and Screws.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

Double Nut Boiler Screws.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

Brass Sleeves.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

New River Pattern Croydon Ball Valves, S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

Drawn Lead P. & S. Traps with Brass Cleaning Screw.

	1¼ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps ...	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps ...	35/-	45/-	66/-	126/- ,,

Tin.—English Ingots, 3/1 per lb. Solder.—Plumber's 1/3, Tinmen's 1/6, Blowpipe 1/7 per lb.

PAINTS, &c.

			s. d.
Raw Linseed Oil, in pipes	per gallon		0 2 11
,, ,, ,,	in barrels ...	,,	0 3 1
,, ,, ,,	in drums ...	,,	0 3 3
Boiled ,, ,,	in barrels ...	,,	0 3 3
,, ,, ,,	in drums ...	,,	0 3 6
Turpentine	in barrels	,,	0 3 11½
,,	in drums (10 gals)	,,	0 4 1½
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks.)			51 0 0

* The information given on this page has been specially compiled for The Builder, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*)

PAINTS, &c. (*contd.*)

		£	s.	d.
GENUINE WHITE LEAD PAINT—"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J." Brand, and other best brands (in 14 lb. tins) not less than 5 cwt. lots	per ton delivered	69	10	0
Red Lead, Dry (packages extra)..	per ton	39	10	0
Best Linseed Oil Putty	per cwt.	0	15	0
Filicol	,,	0	15	6
Size. XD quality	ftkn.	0	3	6

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths ..	2½d.	32 oz. fourths	6½d.
15 ,, thirds ..	3½d.	32 ,, thirds	8½d.
21 ,, fourths ..	3½d.	Obscured Sheet, 15 oz.	3½d.
21 ,, thirds ..	4½d.	,, ,, 21 ,,	4½d.
26 ,, fourths	4½d.	Fluted 15oz.6½d.,21oz.	9d.
26 ,, thirds ..	6½d.	En'lled 15 oz.4½d.,21oz.6½d.	

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per ft.
⅛ Rolled plate	4½d.
⅛ Rough rolled	5½d.
¼ Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic Stippolyte, and small and large Flemish White	5½d.
Ditto, tinted	8½d.
Rolled Sheet	4½d.
White Rolled Cathedral	4½d.
Tinted do.	6½d.

Cast plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon £	s.	d.
Oak Varnish	Outside	0	14	0
Fine ditto	ditto	0	16	0
Fine Copal	ditto	0	18	0
Pale Copal	ditto	1	0	0
Pale Copal Carriage	ditto	1	4	0
Best ditto	ditto	1	12	0
Floor Varnish	Inside	0	18	0
Fine Pale Paper	ditto	0	18	0
Fine Copal Cabinet	ditto	1	2	6
Fine Copal Flatting	ditto	1	0	6
Hard Drying Oak	ditto	0	18	0
Fine Hard Drying Oak	ditto	0	19	0
Fine Copal Varnish	ditto	1	0	0
Pale ditto	ditto	1	2	0
Best ditto	ditto	1	12	0
Best Japan Gold Size		0	12	6
Best Black Japan		0	10	6
Oak and Mahogany Stain (water)		0	12	0
Brunswick Black		0	7	6
Berlin Black		0	14	6
Knotting (patent)		1	5	0
French and Brush Polish		0	17	0
Liquid Dryers in Terebine		0	9	0
Cutrass Black Enamel		0	7	0

INCORPORATED CHURCH BUILDING SOCIETY

At a meeting of this Society, held at 7, Queen Anne's Gate, Westminster, on Wednesday, the 15th ult., the Hon. Sir E. P. Thesiger, K.C.B., in the chair, grants were made towards building a new church at:

Sunderland, S. Mary Magdalene (Durham), £75.

Towards enlarging or repairing the churches at:—Althorpe, S. Oswald, £50; Ayston, S. Mary, £25; Camden Town, S. Michael, £75; Epworth, S. Andrew, £40; Garway, S. Michael, £40; Lumb-in-Rossendale, S Michael, £50; Prestwich, S. Hilda, £100; Worcester, S. Clement, £30.

The following grants were also paid for works completed at:—Brockley Rise, S. Saviour, £60; East Molesey, S. Paul, £50; Mitcham, S. Olave, £15; Presteigne, S. Andrew, £50; Rochester, S. Nicholas, £100; Sharpness, S. Andrew, £70.

In addition to the above the sum of £1,043 was paid from Trust Funds towards repairs to 35 other churches.

The monthly meeting was followed by the Annual General Court, at which Mr. Lawrence E. Tanner F.S.A., was elected to fill a vacancy on the committee. Mr. Arthur Harvey Hoare was also re-elected as honorary treasurer

Obituary.

The death has occurred of Mr. John M'Eachran, builder, Kinloch, Glasgow-road, Paisley, aged 54 years.

THE SCOTTISH BUILDER

HOUSING PROGRESS IN SCOTLAND

The following figures show the progress that has been made in State-aided housing schemes in Scotland to April 30, 1928:—

	Completed.	Under Construction.
1919 Act	25,550	—
Private Subsidy Schemes (1919 Additional Powers Act)	2,324	—
Slum Clearance Schemes ...	7,095	2,854
1923 Act:—		
By local authorities ...	3,966	119
By private enterprise ...	12,298	2,641
1924 Act:—		
By local authorities ...	21,396	12,429
By private enterprise ...	431	419
Demonstration Houses ...	17	—
Steel houses erected on behalf of Government by Scottish National Housing Company	2,542	10
	75,619	18,472

NEW BUILDINGS IN SCOTLAND

Glasgow.—SLUM CLEARANCE.—An inquiry has been held in Glasgow by Mr. R. H. Maconochie, advocate, on behalf of the Scottish Board of Health, into the proposed Glasgow Improvement Scheme, 1928, approved by the Corporation of Glasgow at the close of last year.

Glasgow.—BUILDING.—At a sitting of the Glasgow Dean of Guild Court, linings were granted to the Corporation to erect 12 houses at Parkhead and to W. H. P. Martin, 147, Bath-street, trustee for a company now being formed—to erect a picture-house at south side of Cathcart-road, Mount Florida. Messrs. Andrew Ritchie and Son, Ltd., 91, James-street, Bridgeton, are also to erect a factory. The Johnston U.F. Church are to erect a pavilion at Springburn-road, and the Glasgow University Court to erect premises for the Students' Union in University-avenue.

Edinburgh.—BUILDINGS.—The Edinburgh Dean of Guild Court has sanctioned the following plans:—Scottish Cinema and Variety Theatres, Ltd., cinema in Rodney-street; Mr. James Banks, six houses and garages at Milton-road East; City of Edinburgh, four houses at Drum-street, Gilmerton; eighteen houses at Dalkeith-road; and six houses at Grassmarket; Mr. Louis Robertson, four houses at Westgarth-avenue, Colinton; Scottish Malt Distillers, Ltd., laboratory at 15, William-street Lane; and the Edinburgh Southern Tennis Co., Ltd., pavilion at Kirkhill-road.

Aberdeen.—IMPROVEMENTS.—Civic improvements amounting to £210,768 have been agreed upon by the Aberdeen Town Council. They are as follows:—Fish Market Extension, £130,410; Music Hall Purchase, £34,000; and City Hospital Extension. £46,358.

Glasgow.—EXTENSION.—Among the subjects being considered by the Glasgow Corporation is a proposal to extend the reading-room of the Mitchell Library in order to provide more accommodation for readers. The proposed extension will, it is estimated, cost £3,500.

Edinburgh.—BUILDING.—Among the warrants granted by Edinburgh Dean of Guild Court are:—Hepburn Bros.—six bungalows at Meadowhouse-road, Corstophine; Thomas Brown—four flatted houses at Willowbraegardens; James Bruce—double villa at Liberton-drive; District Board of Control—transformer house at Gogarburn; William W. Hamilton—double bungalow at Riselaw-terrace; John D. M'Laren and another—two bungalows at Saughtonhall-grove; and Tom Bolan—26 lock-ups behind 3, Salisbury-road.

Aberdeen.—SCHOOLS.—At a meeting of the Aberdeen Education Authority the plans of the proposed two new schools on a site at Hilton were approved.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rate of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons'‡ Bricklayers'‡ Plasterers'†
Aberdeen	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Airdrie	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Alexandria	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Arbroath	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/5½	1/1
Ayr	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2½
Bathgate	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Coatbridge	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Dumbarton	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Dumfries	1/6½	1/6½	1/6½	1/7½	1/6½	1/6½	1/6½	1/2
Dundee	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3
Dunfermline	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/7½	‡1/2½ †1/3–1/3½
Edinburgh	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Galashiels	1/6½	1/7	1/6½	1/7	1/6½	1/6½	1/8	1/2
Glasgow	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Greenock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Hamilton	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Hawick	1/7	1/7	1/7	1/7–1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7	1/2½
Inverness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/- to 1/2
Kilmarnock	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/8	1/2½
Kirkcaldy	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3–1/3½
Kirkwall	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-
Lanark	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Leith	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	1/3½
Motherwell	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Perth	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3
Stirling	1/7½	1/7½	1/7½	1/8½	1/7½	1/7½	1/7½	1/2½
Stirlingshire (Eastern District)	1/7½	1/9	1/7½	1/8½	1/7½	1/7½	1/8	1/2½
Wishaw	1/7½	1/7½	1/7½	1/9	1/7½	1/7½	1/8	‡1/2½ †1/3

* **The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 956.**

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	,, ,,	1	0
Add for every additional depth of 6 ft.	,, ,,	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	,, ,,	1	0

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6	per yard cube	38	0
Add if in underpinning in short lengths	,, ,,	7	0
Add if in floors 6 in. thick	,, ,,	3	3
Add if in beams	,, ,,	3	9
Add if aggregate 1 : 2 : 4	,, ,,	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	,, ,,	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	32	0	0
Add if in stocks	,,	7	10	0
Add if in Staffordshire blues	,,	22	0	0
Add if in Portland cement and sand	,,	1	10	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat struck or weathered joint	,, ,,	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	,, ,,	0	0	10
Axed in stocks	,, ,,	0	1	9
Rubbed and gauged jointed in putty camber or segmental	,, ,,	0	6	0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	,, ,,	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	,,	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard super	4	6
Three-quarter-inch vertical damp course	,, ,,	9	6
Three-quarter-inch on flats in two thicknesses	,, ,,	6	3
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	,, ,,	1	2

MASON.

		s.	d.
York stone templates fixed	per foot cube	13	0
York stone sills fixed	,, ,,	22	0
Bath stone and all labour fixed	,, ,,	10	6
Beer stone and all labour fixed	,, ,,	15	0
Portland stone fixed	,, ,,	20	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do. 20 in. × 10 in. Do. Do.	,,	80	9
Do. 24 in. × 12 in. Do. Do.	,,	90	0

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per foot cube	5	0
Do. joists	,, ,,	5	6
Do. roofs, floors and partitions	,, ,,	6	0
Do. trusses	,, ,,	8	6

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	35/6	40/–	45/–	72/–

		s.	d.
Flat centering for concrete floor, including struts or hangers	,,	50	0
Do. to beams	per ft. sup.	0	11
Centre for arches	,,	1	6
Gutter boards and bearers	,,	1	0

FLOORING.

		¾″	1″	1¼″	1½″
Deal-edges shot	per sq.	—	44/6	53/–	60/6
Do. tongued and grooved	,,	—	49/–	57/6	65/–
Do. matchings	,,	45/–	51/–	—	—
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/–	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	10
Two Do. Do. Do.	,, ,,	2	1
Add for fitting and fixing	,, ,,	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights : average size	,, ,,	3	9

DOORS.

		1½″	1¾″	2″
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	,,	2/5	2/8	2/11
Two-panel moulded both sides	,,	2/8	2/11	3/2
Four-panel Do. Do.	,,	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	,,	1/4	1/6	1/9
Add if cross-tongued	,,	2d.	2d.	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/–	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail : average, 3 in. × 3 in.	,, ,,	6	0
Add if ramped	,, ,,	12	0
Add if wreathed	,, ,,	24	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/–
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/–
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	,,	19	0
Do. stanchions	,,	21	9
In roofwork	,,	27	6

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints	ft. run	1/6	1/9	2/–	2/6
Ogee Do. Do.	,,	1/9	2/–	2/6	3/3
Rain-water pipes with ears	,,	1/9	2/7	—	—
Extra for shoes and bends	each	4/4	5/11	—	—
Do. stopped ends	,,	1/11	2/4½	3/7	4/–
Do. nozzles for inlets	,,	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	42	0
Do. Do. in flats	,,	41	0
Extra labour and solder in coated cesspools	each	6	9
Welf joint	per ft. run	0	6
Soldered seam	,, ,,	1	3
Copper nailing	,, ,,	0	3

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste	per ft. run	1/2	1/9	2/–	3/4	4/–	—
Do. service	,,	1/8	2/2	2/7	3/10	—	—
Do. soil	,,	—	—	—	—	—	6/9
Bends in lead pipe	each	—	—	—	—	2/3	8/2
Soldered stop ends	,,	1/2	1/8	2/1	2/10	3/6	—
Read lead joints	,,	11d.	1/–	1/3	1/11	2/4	4/10
Wiped soldered joints	,,	2/10	3/6	4/–	4/11	6/6	9/9
Lead traps and cleaning screws	,,	—	—	—	14/7	19/6	—
Bib cocks and joints	,,	6/4	9/7	15/4	41/–	—	—
Stop cocks and joints	,,	15/4	17/2	25/8	64/–	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	6
Do. Do. Sirapite	,, ,,	2	9
Do. Do. Keen's	,, ,,	4	0
Add saw lathing	,, ,,	1	7
Add metal lathing	,, ,,	2	6
(Not including hangers or runners, etc., for suspended ceilings.)			
Portland cement screed	,, ,,	2	2
Do. plain face	,, ,,	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	6

GLAZIER.

		s.	d.
21-oz. sheet plain	per foot sup.	0	8½
26-oz. Do.	,, ,,	1	0
Obscured sheet	,, ,,	1	1
⅛-in. rolled plate	,, ,,	0	9
¼-in. rough rolled or cast plate	,, ,,	0	10½
¼-in. wired cast plate	,, ,,	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	,, ,,	0	7
Plain painting, 1 coat	,, ,,	0	9
Do. 2 coats	,, ,,	1	2
Do. 3 coats	,, ,,	1	9
Do. 4 coats	,, ,,	2	4
Graining	,, ,,	2	3
Varnishing twice	,, ,,	1	9
Sizing	,, ,,	0	3
Flatting	,, ,,	0	7
Enamel	,, ,,	1	1
Wax polishing	per foot sup.	0	6
French polishing	,, ,,	1	2
Preparing for and hanging paper	per piece, 2/– to 4/–		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him next week not later than Tuesday evening.

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modifications.*

Appleby.—New lavatory, for the T.C.:—
Masonry—
*J. Robinson £244 14 8

Ashbourne.—Wesleyan manse. Messrs. Naylor, Sale & Woore, F.R.I.B.A., architects, Smith's Bank-chambers, Market-place, Derby:—
*E. Ainsworth, Ashbourne.

Bellahouston.—Church Hall for Stevin Memorial Parish Church. Mr. R. J. Walker, architect, Douglas-street, Glasgow:—
Mason—
*T. Stevenson.
Wright—
*Lawson & Co
Plaster—
*Fleming Bros
Slater—
*G. Munro.
Plumber—
*J. Struthers & Son.
Electric Installation—
*W. Walker & Son.
(All of Glasgow.)

Birmingham.—Extensions to the premises of Messrs. Hovis, Ltd. Mr. Fred Fowler, architect, Westminster Bank-chambers, Macclesfield:—
*J. Dodd, Birmingham.

Blackburn.—Rebuilding of the day schools of St. Thomas'. Mr. A. W. R. Simpson, architect, Richmond-terrace:—
*W. Langshaw & Sons, Ltd., Whalley.

Bolton.—Improvements at the Bolton Wanderers' Football Club ground at Burnden Park. Messrs. T. E. Smith & Son, architects, Central-chambers, Fold-street:—
*W. Townson & Sons, Ltd., Bolton.
Steelwork—
*H. Peers & Co., Bolton.

Bredbury.—10 parlour type and 78 non-parlour type houses on George-lane, for U.D.C. Messrs. Thorpe & Collier, architects, Barton House, 66, Deansgate, Manchester:—
*J. & T. Rhodes, Bredbury (10).
*T. Warrington & Sons, Hyde (20).
*F. Booth & Sons, Hyde (24).
*Norgrove & Sons, Hyde (20).

Cardiff.—Elementary school in Grand-avenue, Ely. Mr. G. H. Whitaker, City Engineer and Architect:—
*W. S. Eglen, Cardiff £22,759

Chertsey.—Garages at the Council Offices, West Byfleet, for the R.D.C.:—
*Browne & Lilly, Reading £179 15

Cork.—152 working-class houses, for the Corporation:—
*Housing Corporation of Great Britain £63,411

Cornwall.—Cleaning and repainting station buildings, etc., at following places—Truro, Liskeard, Looe, etc., Gwinear Road, Marazion, etc., Chacewater, Newham, etc., for the G.W.R. Mr. F. R. E. Davis, secretary, Paddington Station, London, W.2:—
*Alfred Bagnall & Sons, Ltd., Shipley.

Gorton.—Branch premises at Haxley-road and South-road, for the Beswick Co-operative Society, Ltd., Rowsley-street, Beswick. Mr. A. H. Walsingham, architect, 62, Market-street, Manchester:—
*J. T. Hollinworth & Son, Patricroft.
Steelwork—
*Banister Walton Co., Ltd., Manchester.

Doncaster.—200 houses on the Intake site near the racecourse, for the Corporation:—
*H. M. Nowell, Ltd., Doncaster £96,450

Douglas (I.O.M.).—Two sub-stations, for Electricity Committee:—
*Ll. Corkhill & Co. ..... £265 each.

Dundee.—Extensions to Clepington sub-station, Tannadice-street, for the Corporation:—
Steelwork—
*Sherrock & Murray, Dundee.
Reinforced Concrete—
*Jas. Laburn, Dundee.

Eastry.—Construction of cast-iron sewers of 15 in., 16 in. and 21 in. diameter, for a total length of about 6,200 yards, together with manholes, also of tanks, filter beds, sludge drying beds, fencing and other works, at Aylesham, for the R.D.C. Messrs. John Taylor & Sons, engineers, Caxton House, S.W.1:—
Sewerage—
*Geo. Stow & Co., Newport (Mon.).
Sewerage Treatment Works—
*Mears Bros., London.

Heanor.—32 non-parlour houses on the Burnt House-road site, for the U.D.C.:—
*W. Wood, Heanor.

Inverbervie.—Three blocks of four houses each, for the T.C.:—
Mason—
*A. Adamson, Laurencekirk £1,393 6 0
Joiner—
*J. Low, Inverbervie 1,039 1 9
Slater—
*J. Scott, Brechin 269 16 3
Plumber—
*J. Grant, Montrose 505 5 6
Plasterer—
*Burness & Son, Montrose 408 0 0
Painter—
*R. Clark, Inverbervie 144 0 0

Ivybridge.—Block of 6 cottages on the Mill Meadow site, for the U.D.C. Mr. W. A. Vercoe, architect, A.R.I.B.A., Sun-buildings, Plymouth:—

Pearn Bros., Plymouth	£3,345 0
F. J. Stanbury, Plymouth	2,891 15
Maris & Hendy, Brent	2,760 0
Elliott & Tallamy, Plymouth	2,700 0
The Plymouth Builders, Plymouth	2,694 0
S. Prowse, Ermington	2,663 12
Yabsley, Ivybridge	2,550 0
Hayter & Cole, Plymouth	2,496 15
*Williams & Bishop, Buckfastleigh	2,410 0

Kettering.—Extensions to factory, for the Kettering Clothing Co-operative Society, Ltd. Mr. R. J. Williams, F.R.I.B.A., architect, Market-street. Quantities by the architect:—

H. Willcock & Co., Ltd., Wolverhampton	£26,200
Gee, Walker & Slater, Derby	25,673
W. Moss & Sons, Ltd., Loughborough	25,400
Thos. Lowe & Sons, Burton-on-Trent	25,168
Wilson, Lovatt & Sons, Wolverhampton	24,510
H. Martin, Ltd., Northampton	23,320

Leicester.—Parochial Hall on the Park estate. Messrs. Pick, Everard, Keay & Gimson, architects, Millstone-lane:—
*Chapman & Sons, Ltd.

Leicester.—Palm House at the De Montfort-gardens:—
*Messenger & Co., Ltd., Leicester £757

Leicester.—Alterations and additions at Christow-street Council school:—
*W. Haddon & Son £1,690

Leicester.—Premises for the Phœnix Assurance Co., Friar-lane. Mr. A. Herbert, architect, Friar-lane:—
*T. Clements, Newcastle-on-Tyne.

Llandudno.—Alterations to Grosvenor Restaurant. Mr. H. Hewit, architect:—
*J. W. Owen & Hughes, Deganwy.

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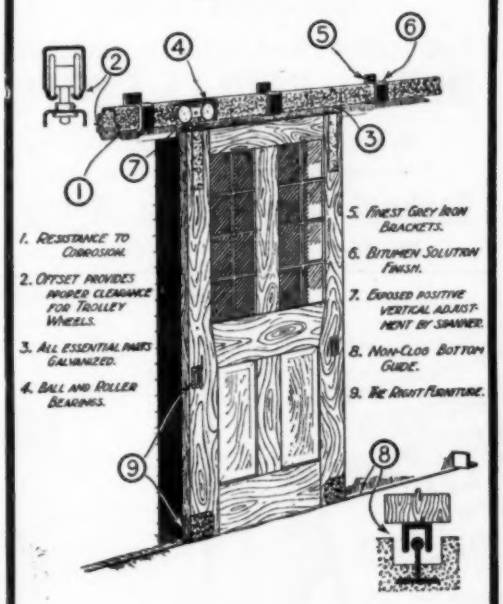
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Longold.—Parish Church. Messrs. Naylot Sale & Woore, FF.R.I.B.A., architects, 7, Market-square, Derby:—
*Greenwoods, Ltd., Mansfield.

Manchester.—Reconstruction of new shop and showrooms at 71, Market-street, for the Carlton Shoe Co., Ltd., London, W.1. Mr. John Knight, A.R.I.B.A., architect, 5, Cross-street:—
*J. T. Hollinworth & Sons, Patricroft.
Steelwork—
*Banister Walton & Co., Ltd., Manchester.
Electric Light—
*Kershaws, Didsbury.
Plasterer—
*W. Pickup, Patricroft.
Brickwork—
*N. Brookes & Co., Patricroft.
Plumber—
*J. A. McCrea & Sons, Ltd., Manchester.

Manchester. — Open-air municipal school at Crumpsall, for the E.C.:—
†E. Marshall & Sons, Ltd., Ashton-under-Lyne.

Manchester.—100 houses, for the Didsbury Park Estate, Ltd., 23, King-street. Mr. Peter Cummings, A.R.I.B.A., architect, 51, King-street:—
*Rough Cast Building Co., Ltd., Manchester.

Manchester.—New cinema in York-street, Hulme, for Mr. T. Royle, 13, Cavendish-road, Chorlton-cum-Hardy. Mr. W. Thornley, L.R.I.B.A., architect, 46, Wallgate, Wigan:—
*A. Ashworth.
Steelwork—
*Edward Wood & Co., Ltd.
Concreter—
*C. Musker & Bros., Ltd.
(All of Manchester.)

Nelson.—Mortuary in the Corporation Yard, off Every-street, for the T.C. Borough Surveyor:—
*E. Dent & Sons.
Plumber—
*H. Smith.
Slater—
*A. Short.
Plasterers—
*B. Hartley & Sons.
Painters and Electricians—
*Nelson Co-operative Society, Ltd.
(All of Nelson.)

Newbigging-by-the-Sea.—For public lavatories, w.c.'s, urinals and mortuary in Bridge-street, for the U.D.C. Mr. Jas. Kailofer, engineer and surveyor. Quantities by the engineer:—

C. R. Carter	1,300
R. Baxter, Blyth	1,230
Finlay & Robinson	1,032
*Jas. F. Dickman	£1,009

(All of Newbiggin.)

Newton Abbot.—98 houses, on Broadlands site, for the U.D.C.:—
*Universal Housing Co., Ltd. £30,960

Paignton.—Additions and alterations to Paignton and District Hospital. Messrs. Bridgman & Bridgman, F./A.R.I.B.A., chartered architects, 1, Palace-avenue:—
*S. Batten, Paignton £11,989

Pontycymmer (Glam.).—For the erection of a physics laboratory and dining hall at the Garw Secondary School, Pontycymmer, for the Glamorgan E.C. Mr. D. Pugh Jones, F.R.I.B.A., County Architect, County Hall, Cardiff:—
*J. Williams & Davies, Caerphilly £2,537

Portsmouth.—New offices, etc., for the Ancient Order of Foresters, Fratton-road. Messrs. A. E. Cogswell and Sons, Chartered Architects, Prudential-buildings, Portsmouth. Quantities by the architects:—

G. J. Davis & Son, Southsea	£6,400
Jno. Croad, Portsea	5,622
Saml. Salter, Southsea	5,467
Tanner Bros., Southsea	5,400
John Lay & Co., Portsmouth	5,398
E. & A. Sprigings, Portsmouth	5,385
F. Privett, Southsea	5,377

Rochester.—6 non-parlour houses on Maidstone-road housing site, for the T.C. Mr. W. Law, City Surveyor:—
*Southend Counties Building Co., Ltd., Chatham £2,005

Salford.—Extensions to the works, for Messrs. G. W. Goodwin & Sons, Ordsall-lane. Mr. H. S. Fairhurst, F.R.I.B.A., architect, 55, Brown-street, Manchester:—
*J. Gerrard & Sons, Ltd., Swinton.

Scarborough.—New garage in St. Thomas-street, for Mr. Hardcastle. Mr. Frank Baker, L.R.I.B.A., architect, 7, York-place:—
*W. T. Petch, Scarborough.

Scotforth.—For work at St. Paul's Schools. Mr. R. W. Jackson, L.R.I.B.A., architect, 43, Church-street, Lancaster:—
*J. Parkinson & Sons, Lancaster.

Shrewsbury.—8 parlour-type and 6 non-parlour type houses at the Racecourse site, for the T.C. Mr. A. W. Ward, Borough Surveyor:—
8 houses—
*S. Hayes & Co., Crescent-lane, Shrewsbury £3,320
6 houses—
*Murray & England, Wellington 2,310

South Mimms.—Repairs and redecoration of 12 houses known as Nos. 1 to 12, Cecil-cottages, for the R.D.C.:—
*H. Gerben, South Mimms £181 4

Stoke-on-Trent.—Extensions to St. Mark's Church, Basford. Messrs. Austin & Paley, architects, Brunswick-street, Newcastle:—

*C. S. Heath & Son, Newcastle-under-Lyne.

Stoke-on-Trent.—Construction of a cooling house at the Hanley Abattoir, for the Stoke-on-Trent T.C.:—

*C. Corries & Son, Hanley £7,369

Sudbury.—9 houses, for the T.C.:—

*G. Gooday, Sudbury £4,142 18 6

Sunderland.—Parochial Hall for St. Andrew's Church, Roker. Messrs. Frank Caws, Stell & Caws, architects, Fawcett-street:—

*Henderson Bros., South Shields.

Sunderland.—Rebuilding the Garrick's Head Inn, Bedford-street. Messrs. W. & T. R. Milburn, architects, 19, Fawcett-street:—

*C. Joseph Huntley & Son.

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Sutton-in-Ashfield.—56 houses on the Kirkby-road housing site. Messrs. Warner, Bocock & Dean, architects, Mansfield-road:—

*R. Moore & Co., Mansfield £18,240

Talgarth.—Alterations to the Police Court, for the Breconshire Standing Joint Committee:—

J. C. Evans, Talgarth	£272	19	0
G. H. Eastwood, Merthyr	259	6	8
Watkins & Bevan, Llangynidr ...	219	10	6
James & Hargest, Talgarth	214	5	10
T. D. Evans & Sons, Talgarth ...	210	0	0
Wm. Havard, Talgarth	198	7	6
*B. Jenkins, Brecon	187	18	0

Tarporley.—Erection of the Tarporley Ardene Institute practical instruction centre. Mr. F. Anstead Browne, F.R.I.B.A., County Architect, Grosvenor-buildings, Newgate-street, Chester:—

*J. T. Gresty & Son, Willaston £2,565

Torquay.—Dressing-rooms, etc., at Windmill Hill, for the E.C.:—

*Vanstone & Sons £900

Walsall.—New infectious diseases hospital at Hoscite-lane, for the Corporation. Mr. J. H. Taylor, Borough Engineer and Surveyor:—

*Kendrick & Sons, Walsall £17,955

West Bromwich.—4 houses in Water-lane, Wigmore, for the Managers of the Walsall and West Bromwich School District. Quantities by Mr. C. W. D. Joynson, Darlaston:—

*E. and W. Bennett, Tipton £2,520
(Subject to sanction of M.H.)

West Bromwich.—General repairs at the District Schools in Wigmore, for the Walsall and West Bromwich School District. Quantities by Mr. C. W. D. Joynson, Darlaston:—

*W. Kendrick & Son, Walsall.

Wigan.—Electric light installations, at the Poor Law Institution, Froglane:—

*J. Schofield, Wigan.

Wilmslow.—House in Hough-lane, for Mr. W. Needham:—

*W. B. Beattie & Co., Ltd., Stockport £3,184

Woking.—Additions to Westfield Junior Council school, for the Surrey E.C.:—

*S. Ellis, Ltd. £2,277

Wolverhampton.—New schools and hall at Old Fallings, near Wolverhampton, by the Rev. Morris Woulfe. Messrs. Sandy & Morris, A.R.I.B.A., architects, 22, Green Gate, Stafford:—

*M. A. Boswell, Wolverhampton £5,774

Workington.—Opera House in Pow-street, to accommodate 1,500. Messrs. Percy L. Browne & Son, architects, Pearl-buildings, Newcastle-on-Tyne:—

*J. & W. Lowry, Newcastle-on-Tyne.

Worplesdon.—Alterations and additions to Woodstreet Council school, for the Surrey E.C.:—

*Chapman, Lowry & Puttick £1,555

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